Forty-Third Annual Report

of the

State Board of Health

of South Carolina

For the Fiscal Year 1922 to the
Legislature of South Carolina

COLUMBIA, S. C.
GONZALES AND BRYAN, STATE PRINTERS,
1923

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LETTER OF TRANSMITTAL

Charleston, S. C., January 22, 1923.

Hon. Thos. G. McLeod, Governor of South Carolina, Columbia, S. C.:

Sir: I have the honor to transmit herewith the 43rd Annual Report of the Executive Committee of the State Board of Health.

The increasing effectiveness with which the work of the Board is carried on is indicated by the lowered mortality reported by the State Health Officer who says: that "this has been the most successful year of public health work in South Carolina." The total death rate has fallen to 11.6 per 1000 of population, 9.4 for the white, and 13.6 for the colored population which "is as low a death rate as can be found for a white population in any state in the Union."

The various coordinated activities of the Board showing the comprehensive scope of its work are set forth in detail in the several departmental reports, to which you are referred. Attention should be directed especially to the remarks of the Director of the Hygienic Laboratory on the rabies situation, which, he says, never improves. "It is growing worse. The number of rabid animals and the number of human beings bitten are increasing every year." This is a very serious situation indeed, but one that can be remedied; for by the institution of proper methods "not only the control but the eradication of rabies and its attendent evils will be accomplished." The only measure which has proved effective is the compulsory prophylactic inoculation of all dogs. The General Assembly should enact a law requiring this to be done at the owner's expense. The cost of such inoculation will be trifling and the results achieved in the eradication of this great and growing evil will be enormous.

The State Health Officer points out "that this State is behind other states in its care for the health of those living in rural districts," and since 85% of our population is rural, this reproach should be removed and adequate provision made by the General Assembly for properly carrying on this most important work.

The Bureau of Child Hygiene which has been in operation for four years has an organization equal to that of any in the country, and under the able administration of Mrs. Ruth A. Dodd has accomplished a tremendous amount of good in its special field of work.

One of the most important activities of the Board is that of malaria control and it is gratifying to note that Captain Fisher points out that "the value and importance of mosquito control work in preventing malaria is being appreciated to an increasing extent throughout the State, as is evidenced by the amount of work the towns are undertaking on their own initiative." An extremely interesting observation is that dengue did not appear in certain localities in which mosquito control work was carried on effectively.

The reports on the sanitary condition of the State penal and charitable institutions are particularly commended to your attention. These reports which are made every year embody the observations of the Board together with suggestions for the correction of such defects as may be found to exist. They should receive the most careful study.

The work of the State sanatorium for the treatment of tuberculosis, of the department of vital statistics, the hotel inspectors, the sanitary engineer, the epidemologist, and the chemist to the State Board of Health, all cover highly important fields, and their contributions add materially to the efficiency of the State Board of Health, and consequently to the health and comfort of the people of the State.

Respectfully,

ROBERT WILSON, JR., M. D., Chairman.

GENERAL REPORT

This is the forty-third annual report of the Executive Committee of the State Board of Health, and is for the year ending December 31, 1922.

This report is made in compliance with the Concurrent Resolution, which directs that every officer of the departments of the State Government required by law to make a report to the General Assembly shall contain only concise statements of recommendations and of the transactions of the officer of the department; and that no copy of any report, or document, or law, or proposed measure shall be made and printed at the expense of the State except what shall be absolutely necessary for the information of the General Assembly.

EXECUTIVE COMMITTEE STATE BOARD OF HEALTH.

Robert Wilson, Jr., M. D., Chairman ..... Charleston
Robt. A. Marsh, M. D. ..... Edgefield
C. C. Gambrell, M. D. ..... Abbeville
E. A. Hines, M. D. ..... Seneca
Wm. R. Wallace, M. D. (vice Dr. M. J. Walker deceased) Chester
William Egleston, M. D. ..... Hartsville
W. M. Lester, M. D. ..... Columbia
S. C. Calder, Ph. G. ..... Greenville
Samuel M. Wolf, Attorney General ..... Columbia
Walter E. Duncan, Comptroller General ..... Columbia
James A. Hayne, M. D. .....

Secretary and State Health Officer, Columbia.

STAFF OF SOUTH CAROLINA DEPARTMENT OF HEALTH.

James A. Hayne, M. D., Executive Officer of State Board of Health.
F. A. Coward, M. D., Assistant State Health Officer. (Resigned August 1, 1922.)
A. H. Hayden, M. D., Epidemiologist.
E. L. Filby, State Sanitary Engineer.
J. H. Woodward, Hotel Inspector.
E. W. Grieshaber, Bookkeeper.
W. M. Riser, Secretary to Dr. Hayne.
John Roundtree, Janitor.

LABORATORY DEPARTMENT.

H. M. Smith, M. D., in charge. (vice F. A. Coward, M. D., resigned August 1, 1922.)
James R. Cain, Bacteriologist.
Eugenia McDonald, Thechnician.
M. C. Davis, Stenographer.
F. L. Parker, M. D., Chemist and Bacteriologist, Charleston.

MALARIA CONTROL DEPARTMENT.

L. M. Fisher, Assistant Sanitary Engineer, U. S. P. H. S., in charge.
Robt. S. Baynard, Malaria Field Agent.
William Weston, Sanitary Inspector.
Lindslay Arthur, Sanitary Inspector.
Mary Dorn, Stenographer.

BUREAU OF CHILD HYGIENE.

Mrs. Ruth A. Dodd, Director.
Miss F. O. Winter, Secretary to Director.
Miss Mary McMillan, Secretary to Nursing Staff.
Miss Janie Fairey, Statistical Clerk.
Miss Jeanette Hayes, District Supervisor.
Miss Elizabeth Rohrbach, District Supervisor.

BUREAU OF CHILD HYGIENE (Continued.)

Miss Ruth Moore, Maternity & Infancy Supervisor.
Miss Laura Blackburn, Field Nurse.
Mrs. Henrietta Ablard, Field Nurse.
Ellen W. Carter, Colored Field Nurse.

BUREAU OF VITAL STATISTICS.

Mr. C. W. Miller, Asst. State Registrar.
Helen Coles, File Clerk.
Mary Currell, Stenographer.
Lize Darby, Index Clerk.

BUREAU RURAL SANITATION AND COUNTY HEALTH WORK.

L. A. Riser, M. D., in charge.
F. L. Gary, Office Secretary.
County Health Officers—Leon Banov, M. D., Walter Boone, M. D., R. G. Hamilton, M. D., E. P. Knotts, M. D., J. J. Post, M. D., Baylis Earle, M. D., G. C. Bolen, M. D.
County Nurses—T. Lightsey, L. Spoenemann, A. Tanksley, L. Honicker.
County Inspectors—J. Wise, G. G. Scruggs, J. B. Bailey, S. S. Welch.
County Stenographers—M. Mood, G. Smith.

SOUTH CAROLINA SANITORIUM.

Ernest Cooper, M. D., Superintendent.
J. C. Bonner, M. D., Assistant Physician.
Mrs. Estelle Cooper, Matron.
Carrie Spivey, R. N.
Pearl Leitzey, R. N.
Pupil Nurses.
Servants.

PALMETTO SANITORIUM.

Frances Baumgardner, Housekeeper.
Rebecca Belton, Nurse.
May White, Nurse.
Servants.

THE BOARD'S QUARTERS.

The Executive Department of the State Board of Health, the Bureau of Child Hygiene, Malaria Control Department, and the Department of County Health Work occupy rooms on the second floor of the Palmetto Building.

The Laboratory remains in well arranged rooms furnished by the University of South Carolina, in LaConte College.

The Bureau of Vital Statistics is at the University of South Carolina in LeConte College.

The South Carolina Sanitorium for the treatment of Tuberculosis at State Park, eight miles from Columbia.

MISCELLANEOUS.

In making this, the 43rd Annual Report of the work done by the State Board of Health during the year 1922, we feel that in spite of the handicap of lowered appropriations we can truthfully state that this has been the most successful year of public health work in South Carolina. Each department shows by its report that every effort has been made to conserve the health of the people of this State. The death rate is 11.5 per 1000 population—white 9.4; colored 13.6. This is as low a death rate as can be found for a white population in any state in the Union. Remember, in giving this rate it is not a statement from the Secretary of the State Board of Health, but is the rate give us by the Bureau of Census in Washington, that our figures are certified as being correct by the Federal Government. When one remembers that the total death rate in 1915 was 15.4, one can see what a remarkable reduction this is.

Also, we wish to make a comparison between the total number of children under one year of age who died in 1916, as compared with the total number of children under one year of age who

died in 1922. In 1916, the total number of deaths of children under one year of age was 4300; in 1922 it was 3483. This shows a saving of 817 babies.

The figures show deaths from 1 to 10 years of age for 1916 were 2612; for 1922, 1737, showing a saving of 875 children as compared with the year 1916. This gives a total saving of children under 10 years of age of 1692.

The State Board of Health feels that this accomplishment is something to be reasonably proud of. We are certain that no State can show figures comparable to these.

The Bureau of Child Hygiene, which has now been in operation for four years, is thoroughly organized and a complete report from Mrs. Ruth A. Dodd, Director of this Bureau, is to be found later in this volume. It is admitted that this is as well organized bureau as can be found anywhere in the United States, and that its work is effective is proved by the above figures. With the help of the Shepherd-Towner funds, a thoroughgoing campaign for the education of midwives, for the teaching of expectant mothers by a correspondence course, by baby clinics, in which children are examined and suggestions made as to their feeding, correction of handicaps such as diseased tonsils, adenoids, and other defects are provided for and inspection of school children is systematically carried out.

We regret exceedingly the loss of Mrs. Dodd as director of this Bureau. For four years she has been untiring in her work in South Carolina, and it has been through her efforts that this Bureau has been brought to its present stage of efficiency. It is now a well-oiled machine, and in securing Miss Ada Graham, of Mt. Vernon, Ohio, a woman thoroughly trained in the work that she is now undertaking, it is felt that greater accomplishments even than those previously made will be seen in the year 1923.

The report of the Hygienic Laboratory shows that this department has, with an extremely limited and underpaid personnel, accomplished an enormous amount of work this year. When one considers that 11,755 examinations were made, exclusive of Wassermans, of which there were 15,873, and that under the anti-rabic work of the Laboratory, 769 people were treated, 732 at their homes, and 27 at the Laboratory, and that this treatment, which is made by the Laboratory, is sold by

biological laboratories at the rate of $50.00 per treatment, and would have cost the people of the State $38,450,00, and that the total cost of the Laboratory was but $11,000.00, one can see at a glance even in this one operation of the laboratory the saving to the tax-payer.

The number of Wassermen tests made by the Laboratory was 15,873. At the usual cost of $5.00 per examination, these tests would have cost the State $79,365.00.

This Laboratory is patronized by every county in the State. Nearly every physician in the State sends specimens for examination and we wish to request that it be more liberally supported by the Legislature.

The Legislature's attention is also called to the rabies situation in South Carolina, and in the report of the Laboratory is suggested a remedy, *viz.*; to eliminate rabies by compulsory prophylactic inoculation of dogs with anti-rabic vaccine, at the owner's expense.

The venereal disease control work in this State was abandoned last year, so far as an appropriation from the State was concerned. A small appropriation was made to settle up the outstanding bills of that department. Four clinics continued, however, in the State and as the Federal Government supplemented the State appropriation by some $3,583.73. These clinics placed their money in the State Treasury and we were thus enabled to get this money from the Federal Government for use in these clinics. We are asking this year that this sum be appropriated direct so that we can do educational work, so that the public may know the consequences of syphilis and be guarded against this disease, and treated should they be so unfortunate as to contract the same.

The Vital Statistics Department still continues to fnction in the best manner possible. Though under-paid, under-manned, and with many handicaps, it yet continues to give to the State those statistics which alone can show whether public health work is being properly carried out in this State.

In the report of the Department of Rural Sanitation, it is seen that excellent work is being accomplished. Dr. L. A. Riser, in charge of this Department, has been with the State Board of Health for the past eleven years, and is untiring and

zealous in endeavoring to give to the counties that will accept the funds provided by the State, and by the International Health Board, efficient county health departments.

We feel that this State is behind other states in its care for the health of those living in the rural districts. As 85% of the population of South Carolina is rural, we feel that this department should be adequately supported. Its work is in the nature of a demonstration to a county of from one to three years, showing the county how to establish a department of county health work, and those counties which have taken advantage of this work have been greatly benefitted. The funds are gradually withdrawn from the county and placed in other counties which are willing to take advantage of the offer made to them. The funds provided by the State last year were $15,000.00 provided by the International Health Board, $13,500, and by the counties about $35,000. In addition to the intensive work done in the counties, a moving picture truck was sent into eighteen counties in the State, where pictures were shown in rural schools, illustrative of problems of public health, such as prevention of typhoid, vaccination of school children, and the care of babies. The showing of these films was of great interest; they were shown to 84 audiences, and 16,623 people saw them. We expect to continue the showing of these pictures, with additional films this year.

An extremely efficient piece of work has been carried out this year by Mr. J. H. Woodward, our State Inspector of hotels and restaurants. 175 hotels, in practically every town in South Carolina, were inspected twice and scored. 525 restaurants were also examined and scored. Great improvement is seen in the hotels and restaurants of South Carolina since this piece of work was put on.

It is emphasized that this work is paid for by the hotels and restaurants and does not cost the State anything through taxation.

Mr. Woodward's report is found elsewhere in this volume.

MALARIA CONTROL.

In the opinion of the State Health Officer, one of the most important matters for the Legislature to consider is the control of malaria in South Carolina. Owing to the ravages of the boll weevil, those sections of the lower part of South Carolina which formerly produced great wealth in the form of cotton are unable any longer to make that their main crop. In order to diversify crops, one must have intelligent white laborers, and owing to the ravages of malaria, it is impossible to induce a sufficient number of white people to live in certain sections of South Carolina, these sections being the most fertile part of the State, capable of producing enormous wealth in the form of truck farming operations. Demonstration has been made that with a reasonable expenditure of money, malaria can be completely controlled.

Capt. L. M. Fisher, who is in charge of this Department, is loaned to us without cost by the Federal Government, and the work done in this Department is clearly set forth in his report to be found elsewhere in this volume. He has succeeded in enlisting the cooperation of towns and counties in the work to prevent malaria. This work must be of necessity educational. The farmer must be taught that he can with a little expenditure of time and money make his home and his tenants' homes free from malaria. An experiment will be tried out in Georgetown County for the coming year to see what can be done in rural malaria work. Up to this time the work has been done in small towns, the towns putting up the major portion of the money and the State and International Health Board contributing the remainder. In the counties, however, the work cannot be done as intensively as in the cities, but people will be taught how to recognize the anopheles mosquito that carries malaria, how to get rid of its breeding places, how to screen their homes, how to take quinine so as to prevent their having malaria, and how to take it so that if they have contracted the disease they can be cured. This work will be carried out by illustrative lectures, by house to house visits, and in every way the people will be taught that malaria is preventable and that malaria in a community means immense economic loss, and that its eradiction will be of financial value to the community.

SOUTH CAROLINA AND PALMETTO SANATORIA.

The South Carolina Sanatorium and Palmetto Sanatorium, the former for white and the latter for colored people, are situated seven and one-half miles from the city of Columbia, and have since the first building was built, been of inestimable value to the people of South Carolina. The long waiting list testifies to the interest taken by the people in the hospitalization of tubercular patients.

(1) The number of beds now provided are too few, but in spite of this fact the Sanatoria have provided for many who could not have been otherwise cared for.

(2) The Legislature last year provided funds which built a woman's ward, to take care of 26 white women patients. They also provided funds with which was built a water tank with a capacity of 50,000 gallons, on a hundred foot steel tower, with a 6″ main and 8″ driven well. This takes care of the water supply, both for fire protection and for drinking purposes. A new septic tank for sewerage has been installed. Cement walks connecting the buildings of the Sanatorium have been laid, and we feel that we have a model institution run at an extremely low cost.

A member from the Executive Committee of the State Board of Health inspects the South Carolina and Palmetto Sanatoria monthly, and makes a written report to the Executive Committee every month so that the Executive Committee is in thorough touch with this institution and sees to it that it is maintained in the best possible manner.

A perusal of the report of Dr. Cooper for the past year will show the requirements of the Sanatorium. We need a nurses' home, a superintendent's home, servants' houses, an amusement hall, and an infirmary similar to the present one. These are crying needs, and South Carolina cannot say that she is too poor to take care of these unfortunate people, for remember, members of the Legislature, that these people can be cured, and can become self-supporting citizens of South Carolina if proper provision is made for their care. We urge upon the Legislature to send a committee of three from the House, and three from the Senate to visit this institution and learn its needs. The expressions of gratitude which they will hear from those that

are there for what has been done for them will stimulate the Legislature to see to it that more people are taken care of than have been in the past. We are winning the fight against tuberculosis. The figures show that in 1915 there were 1,735 deaths from tuberculosis, whereas in 1922, there were 1,121. But still, these 1,121 who died are sources of infection to all who surround them, and until we can properly hospitalize the tubercular cases we cannot hope to completely get rid of the Great White Plague.

South Carolina is carefully guarded, in its cities especially, against polluted water supplies through the untiring efforts of Mr. E. L. Filby, our State Sanitary Engineer. His report is appended and shows conscientious efforts on his part to see to it that the water supplies of the cities are protected, and that proper disposal is made of the sewage of cities. The State Board passed regulations this year requiring that all plans for sewage disposal shall be submitted to the State Board of Health before they shall be put into operation. It also adopted the railway sanitary code, which will safeguard the health of passengers.

The chemical and bacteriological examination of the water supplies of cities and manufacturing plants is carried out by Dr. F. L. Parker, at the Parker Laboratories in Charleston. His report is appended to this volume.

The report of the Epidemiologist, Dr. A. H. Hayden, shows that the State has been thoroughly covered by him, and that epidemics have been prevented, school laws have been enforced, and in every way he has assisted in the maintenance of the public health of this State. He has been fearless in the performance of his duties, and his itinerary as shown in his report speaks for itself. He has been active all the time.

The distribution of biologics this year shows that there has been an increasing desire on the part of the public to avail themselves of the protection offered through diphtheria antitoxin, typhoid bacterin, meningitis serum, tetanus antitoxin and the other biologics offered free by the State of South Carolina to its citizens. 69,426 ampules of typhoid serum have been sent out this year, which is the largest amount we have ever sent out in one year. This means that 23,142 people have been inoculated.

The State Health Officer has been kept busy this year consulting with the various departments and assisting them in

carrying out their programmes. He has attended various scientific meetings, and has thus been able to keep abreast of the best sanitary knowledge of the day.

We wish to bring to the attention of the General Assembly, under the head of "Pure Food and Drugs," the fact that many drugs are adulterated and sold to the people of South Carolina. It is of extreme importance that an inspection be made of these drugs and their pharmaceutical strength tested, as required by the United States Pharmacopoeia. So far as we know, no test is being made of drugs sold in South Carolina. It is unnecessary to state that such drugs as digitalis and ergot, upon whose strength depend the lives of patients, should be of the strength required by the United States Pharmacopoeia, and it is only by rigid inspection and testing of samples obtained by an inspector that the public can be assured of the purity of drugs sold on prescriptions.

We therefore recommend that the Legislature authorize the employment of an inspector to obtain samples of durgs, and that these drugs be tested in the State Laboratories to determine their purity. Under the law, the Department of Agriculture carries out such regulations in regard to pure food and drugs as the State Board of Health may promulgate, and though this Department is most zealous in its efforts to prevent the sale of adulterated foodstuffs and to carry out all duties imposed upon it, yet they have not a sufficient number of men to make proper inspection of bakery products, candies and drugs.

The State Board of Health is now established in its offices on the second floor of the Palmetto Building, and all departments, except the Hygienic Laboratory, and the Bureau of Vital Statistics, which are in LeConte College, University of South Carolina, are housed on one floor, making for greater efficiency in the work of the Department.

REPORT OF EPIDEMIC AND CONTAGIOUS DISEASES OCCURING IN SOUTH CAROLINA DURING 1921.

By James A. Hayne, M. D., Chairman of Committee.

SMALLPOX.

The following amount of smallpox vaccine was distributed by quarters:—

1921		1922	
First Quarter	$2,275 00	First Quarter	$1,320 00
Second Quarter	975 00	Second Quarter	823 35
Third Quarter	3,185 00	Third Quarter	2,145 00
Fourth Quarter	2,340 00	Fourth Quarter	1,950 00
Total	$8,775 00	Total	$6,238 35

The price was .06½ per point and the number of points distributed were: 95,982.

DIPHTHERIA.

The following table is presented, showing the number of cases diagnosed as diphtheria and receiving antitoxin.

DIPHTHERIA TABLE NO. 1.
TABLE SHOWING THE NUMBER OF CASES DIAGNOSED AS DIPHTHERIA AND RECEIVING ANTITOXIN.

1922.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Abbeville	2	5	2	2	....	5	2	11	10	6	7	3	55
Aiken	....	....	....	....	1	3	....	1	7	14	5	6	37
Allendale	....	....	....	....	....	....	....	....	....	....	....	....	....
Anderson	3	7	3	7	8	2	5	11	31	26	18	7	128
Bamberg	....	....	....	....	....	....	2	20	12	....	....	....	34
Barnwell	6	....	2	....	....	....	....	2	5	4	6	1	26
Beaufort	....	....	....	....	1	....	....	2	1	3	3	....	10
Berkeley	....	....	....	....	....	....	....	....	....	3	....	2	5
Calhoun	....	....	....	....	1	2	....	....	2	1	20	1	27
Charleston	3	3	2	5	24	....	4	3	10	10	2	14	80
Cherokee	....	....	16	....	....	....	....	1	8	9	1	9	44
Chester	....	....	4	1	....	....	....	3	23	5	7	2	45
Chesterfield	3	4	....	....	2	1	....	10	28	11	....	....	59
Clarendon	3	....	2	5	....	3	2	1	1	3	....	1	21
Colleton	14	4	4	11	....	....	....	6	2	1	12	2	56
Darlington	7	....	2	2	2	3	3	2	11	6	10	....	48
Dillon	....	3	....	....	3	5	3	18	13	3	12	1	61
Dorchester	2	....	2	....	1	1	4	3	4	16	3	1	37
Edgefield	3	2	....	....	2	....	....	2	3	10	....	....	22
Fairfield	....	....	....	....	....	4	....	....	1	12	....	....	17
Florence	33	....	6	4	22	....	5	15	21	5	33	....	144
Georgetown	....	1	....	....	....	1	1	4	2	4	....	....	13
Greenville	25	9	....	3	10	....	3	12	30	57	46	33	228
Greenwood	5	5	....	4	14	....	10	5	20	16	10	6	95
Hampton	1	2	....	....	....	....	3	6	....	2	1	3	18
Horry	3	1	4	....	1	....	....	....	6	11	5	9	40
Jasper	2	....	....	....	....	....	....	....	3	1	1	1	8
Kershaw	....	....	....	....	23	....	....	8	6	4	3	10	54
Lancaster	....	....	....	....	....	5	....	7	14	....	....	....	26
Laurens	6	7	....	....	4	2	3	1	17	6	9	6	61
Lee	2	1	1	....	....	....	....	....	3	5	....	2	14
Lexington	10	8	9	3	1	9	1	7	20	18	9	4	99
McCormick	....	....	....	....	....	....	....	....	....	....	....	....	....
Marion	1	2	1	1	5	....	2	10	13	4	4	1	44
Marlboro	2	....	2	5	....	....	1	41	24	39	8	3	125
Newberry	13	4	1	2	11	2	7	2	18	7	20	....	87
Oconee	....	8	....	2	....	3	1	4	24	12	10	11	75
Orangeburg	10	2	6	1	....	13	9	14	20	34	27	3	139
Pickens	....	5	1	....	....	....	....	....	12	12	5	....	35
Richland	12	7	15	14	22	4	6	22	22	48	9	13	194
Saluda	3	2	1	2	1	8	2	5	7	5	4	3	43
Spartanburg	36	11	9	13	5	15	8	17	61	81	39	17	312
Sumter	....	1	1	....	....	1	....	5	1	6	4	2	21
Union	1	....	1	2	1	7	11	13	8	10	24	1	79
Williamsburg	....	....	....	....	....	8	....	5	3	....	8	1	25
York	1	....	....	....	11	3	13	9	33	19	15	9	113
Totals	212	104	97	89	176	110	111	308	560	549	400	180	2919

The amount of diphtheria antitoxin consumed as compared with 1921 is as follows:

DIPHTHERIA TABLE NO. 2.

	1921				1922			
	1,000 Units.	5,000 Units.	10,000 Units.	20,000 Units.	1,000 Units.	5,000 Units.	10,000 Units.	20,000 Units.
January	50	59	79	1	47	72	168	18
February	72	91	162	17	38	51	160	13
March	142	169	319	5	65	70	113	15
April	24	30	58	2	29	69	91	17
May	49	45	87	2	53	85	152	33
June	68	102	130	..	53	70	143	13
July	152	174	202	3	48	80	146	18
August	183	158	376	2	140	176	346	57
September	412	443	638	35	331	337	628	116
October	428	461	769	56	303	350	586	123
November	209	229	584	81	187	230	486	90
December	113	175	289	46	113	175	289	46
	1,902	2,126	3,693	250	1,407	1,765	3,308	559

The expenditures for diphtheria antitoxin as compared with 1921 are as follows:

DIPHTHERIA TABLE NO. 3.

1921		1922	
Month	Cost	Month	Cost
January	$ 299 65	January	$ 632 50
February	626 05	February	554 00
March	1,089 95	March	487 50
April	201 30	April	422 00
May	293 65	May	682 50
June	487 10	June	547 50
July	687 30	July	590 00
August	1,277 50	August	1,455 50
September	2,623 00	September	2,763 00
October	3,080 00	October	2,695 00
November	2,272 50	November	2,058 50
December	1,646 50	December	1,248 50
Total	$ 14,585 50	Total	$ 14,136 50

E. R. Squibb & Sons of New York continue to furnish the State reliable diphtheria antitoxin and vaccine virus.

DIPHTHERIA ANTITOXIN DISTRIBUTORS.

ABBEVILLE COUNTY.

Abbeville ..... McMurray Drug Co.
Donalds ..... Johnson Drug Co.
Due West ..... Todd Drug Co.

AIKEN COUNTY.

Aiken ..... Hall's Pharmacy, W. J. Platt & Co.
Graniteville ..... E. E. Platt, W. C. R. Turnbull
Lake View ..... Smith's Drug Store
Langley ..... Langley Drug Co.
North Augusta ..... W. E. Mealing, M. D.
Salley ..... Jones Pharmacy
Wagener ..... Abel & Jordan
Bath ..... Bath Pharmacy

ANDERSON COUNTY.

Belton .....Frierson's Pharmacy, Horton's Pharmacy
Anderson..Bigby's Pharmacy, Peoples Pharmacy, Evans Pharmacy
Honea Path .....Bolt Drug Co.
Iva .....Iva Drug Co.
Pelzer .....W. W. Griffin
Pendleton .....E. G. Evans & Sons
Townville .....J. M. Hobson, M. D.
Williamston .....Guyton Drug Co.

BAMBERG COUNTY.

Bamberg .....Mack's Drug Store
Denmark .....Peoples Pharmacy
Erhardt .....Fender-Kinard Drug Co.
Olar .....R. & H. Drug Store

BARNWELL COUNTY.

Allendale .....R. P. Searson Drug Co.
Barnwell .....Best Pharmacy, Mace Drug Co.
Blackville .....Epps Pharmacy
Fairfax .....Fairfax Drug Store
Williston .....J. M. Smith & Son

BEAUFORT COUNTY.

Beaufort .....C. G. Luther
Port Royal .....M. B. Cope

BERKELEY COUNTY.

Moncks Corner .....Moncks Corner Drug Store
St. Stephen .....T. J. Boykin

CALHOUN COUNTY.

St. Matthews .....Fair's Pharmacy
Fort Motte .....J. A. Woodley, M. D.

CHARLESTON COUNTY.

Charleston .....Roper Hospital, G. W. Aimar & Co., Frierson, Drug Co., M. L. Speisseger, Jno. A. McFall, C. F. Schewettmann & Son, L. G. Melfi, Paragon Drug Co., Ziegler's Pharmacy.
Mt. Pleasant .....Mt. Pleasant Pharmacy

CHEROKEE COUNTY.

Blacksburg .....Iron City Pharmacy
Gaffney .....Gaffney Drug Co.

CHESTER COUNTY.

Chester .....Standard Pharmacy, Chester Drug Co.
Great Falls .....Republic Pharmacy

CHESTERFIELD COUNTY.

Cheraw ..... T. E. Wannamaker & Son
Chesterfield ..... D. H. Laney
Jefferson ..... P. T. Gantt Drug Store
McBee ..... McBee Drug Co.
Pageland ..... Kennington's Pharmacy
Ruby ..... Kennington's Pharmacy

CLARENDON COUNTY.

Manning ..... Dickson's Drug Store
Paxville ..... Thomas W. Gunter
Summerton ..... Summerton Drug Co.
Turbeville ..... C. E. Gamble
New Zion ..... E. B. Gamble, M. D.

COLLETON COUNTY.

Walterboro ..... John M. Kline, Walterboro Drug Co.

DARLINGTON COUNTY.

Darlington ..... Hilton Drug Store, McFall's Drug Store
Lamar ..... Palmetto Drug Co.
Hartsville ..... Boyd-Powe Drug Co.
Hartsville ..... Robert Stewart, Jr.

DILLON COUNTY.

Dillon ..... Evans Pharmacy, Moody Drug Co.
Latta ..... Peoples Drug Co.
Page's Mill ..... Smith's Pharmacy

DORCHESTER COUNTY.

St. George ..... P. M. Judy
Summerville ..... Tupper Pharmacy Co.

EDGEFIELD COUNTY.

Edgefield ..... A. Bird, Mitchell & Cantelou, J. D. Holstein
Johnston ..... Peoples Drug Co.

FAIRFIELD COUNTY.

Ridgeway ..... B. G. Team, M. D., Ridgeway Pharmacy
Winnsboro ..... J. H. McMaster & Co.
Blythewood ..... M. Langford

FLORENCE COUNTY.

Florence ..... F. U. Lake Drug Co.
Lake City ..... Lake City Drug Co.
Scranton ..... W. S. Lynch
Timmonsville ..... Marvin Drug Co., Cole Drug Co.
Pamplico ..... Peoples Drug Store

GEORGETOWN COUNTY.

Georgetown ..... Iseman Drug Co.
Andrews ..... Thompson's Drug Co., Hogan's Drug Store

GREENVILLE COUNTY.

Fountain Inn .....Redick's Pharmacy
Greenville .....Armstrong Pharmacy, Carpenter Bros., L. H. Stringer, Doster Bros. & Bruce, Reynolds & Earle.
Greer .....Corner Drug Co.
Piedmont .....Suber Drug Co.
Simpsonville .....Simpsonville Drug Co.

GREENWOOD COUNTY.

Greenwood .....Harris Drug Co., Greenwood Drug Co.
Ninety-Six .....Holmes Pharmacy
Ware Shoals .....Ware Shoals Mfg. Co. (Drug Dep't.)
Troy .....Troy Drug Store

HAMPTON COUNTY.

Estill .....Estill Pharmacy
Hampton .....Chas. A. Rush

HORRY COUNTY.

Conway .....Horry Drug Co., Conway Drug Co.
Aynor .....Aynor Drug Store

JASPER COUNTY.

Ridgeland .....A. Ritter's, Jr.

KERSHAW COUNTY.

Bethune .....Bethune Drug Co.
Camden .....W. R. Zemp
Kershaw .....Hayner & Gregory

LANCASTER COUNTY.

Heath Springs .....W. T. Stover & Sons
Kershaw .....Hays and Gregory
Lancaster .....Standard Drug Co.

LAURENS COUNTY.

Clinton .....Kellers Drug Store
Gray Court .....Gray Court Drug Store
Laurens ....Laurens Drug Co., Powe Drug Store, Putnam's Drug Store
Cross Hill .....Cross Hill Pharmacy, J. H. Miller, M. D.

LEE COUNTY.

Bishopville .....Law & Ackerman, Parker Drug Co.

LEXINGTON COUNTY.

Batesburg .....Ridgell Drug Co.
Chapin .....J. W. Eargle
Leesville .....Citizens' Drug Co.
Lexington .....Palace Drug Co., Harmon Drug Co.
Pelion .....D. R. Kneece
Swansea .....Johnson's Pharmacy, Livingston Pharmacy, Swansea Drug Co.
New Brookland .....Whetsell's Drug Store

McCormick County.

McCormick .....McCormick Drug Co.

Marion County.

Marion .....J. S. Davis
Mullins .....Palace Drug Co., Kirby's Pharmacy
Nichols .....Nichols Pharmacy

Marlboro County.

Bennettsville .....Douglass & Breeden
Blenheim .....Napier's Drug Store
Clio ..Clio Drug Co., successor to Blackman & McInnis Drug Co.
McColl .....Moore Drug Co.

Newberry County.

Little Mountain .....J. M. Sease
Newberry .....Newberry Drug Co., Gilder & Weeks, Mayes Drug Store
Prosperity .....Prosperity Drug Co.
Whitmire .....Whitmire Drug Co.

Oconee County.

Clemson College .....L. C. Martin
Fair Play .....W. C. Mayes
Seneca .....Seneca Pharmacy
Walhalla .....Peoples Pharmacy, Bell's Drug Store
Westminster .....Frierson's Drug Store, Stonecypher Drug Co.

Orangeburg County.

Branchville .....Noble Drug Store, Pipkin Pharmacy
Elloree .....P. L. Felder
Eutawville .....E. O. Horger
North .....Peoples Drug Store
Orangeburg .....Lowman Drug Co., Wannamaker Drug Co.
Springfield .....Farmers Drug Store, Edisto Drug Co.
Neeses .....Williams Drug Store

Pickens County.

Central .....Central Drug Co.
Easley .....Palmetto Pharmacy
Liberty .....Hunter's Pharmacy
Pickens .....Pickens Drug Co.

Richland County.

Columbia .....Blanding Street Drug Store, McGregor's Drug Store, Taylor Drug Co., Wingfield Pharmacy.
Columbia Hospital ....Heinitsh's Drug Store, Waverley Drug Co.

Saluda County.

Ridge Spring .....Ridge Drug Co.
Saluda .....Saluda Drug Co.

SPARTANBURG COUNTY.

Campobello .....Campobello Drug Co.
Converse .....Peoples Drug Co.
Cowpens .....Cowpens Drug Co.
Inman .....Inman Drug Co.
Landrum .....Landrum Drug Co.
Pacolet .....Pacolet Mfg. Co.
Spartanburg .....Kennedy's Drug Store, Arthur Irwin, Ligon's Drug Store, Henry's Drug Store, K-W-N Pharmacy, Todd Drug Co.
Woodruff .....R. T. Beason, O. E. Westmoreland
Greer .....Greer Drug Co.

SUMTER COUNTY.

Mayesville .....The Peoples Pharmacy
Sumter .....City Drug Co., Hearon's Pharmacy, Sibert's Drug Store, De Lorme Pharmacy

UNION COUNTY.

Jonesville .....Jonesville Drug Store
Union .....Palmetto Pharmacy, People's Drug Store, Glymph's Pharmacy
Carlisle .....Carlisle Drug Co.

WILLIAMSBURG COUNTY.

Greeleyville ..Progressive Drug Co., successor to Service Drug Co.
Johnsonville .....Cockfield Drug Co.
Kingstree .....Kingstree Drug Co.

YORK COUNTY.

Clover .....Clover Drug Co.
Fort Mill .....Lytles Drug Co.
Rock Hill .....Rock Hill Drug Co.
Sharon .....Sims Drug Co.
York .....York Drug Co.
Hickory Grove .....Hood Drug Co.

MINUTES.

Columbia, S. C., March 21, 1922.

A regular meeting of the Executive Committee of the State Board of Health was held in the office of the Secretary at 10 o'clock on the morning of March 21, 1922, with the following members present: Dr. Robert A. Marsh, Dr. E. A. Hines, Dr. Wm. Egleston, Dr. W. M. Lester, Dr. S. C. Calder and the Secretary, Dr. Lester acting as Chairman.

The minutes of the last meeting were read and approved.

The Appropriation Bill for the State Board of Health as passed by the General Assembly was read item by item.

Dr. Egleston moved that a note be inserted in the Minutes that on the call meeting of January 9, 1922, to attend the Health Institute, Dr. Hines, Dr. Egleston and Dr. Lester were present.

It was moved by Dr. Egleston that a letter be written to the assistant in charge of each of the various activities of the Department of Health, notifying them that the names of all who desired appointment to do work under the Department of Health should be submitted with the proposed salary and letters of recommendation to the Board at its regular meetings, temporary appointment to be made only upon the approval of the Secretary and State Health Officer.

The item of $10,000 for the erection of a building at State Park, and the item of $7,500 for water supply were discussed, and the following Committee was appointed as a Building Committee: Dr. Hayne, Dr. Marsh and Dr. Egleston. This Committee was empowered to proceed at once to take such steps as might be deemed necessary in order to secure prompt erection of the building and carry out the wishes of the General Assembly. They were also authorized to erect, as soon as possible, a storage tank and to have driven wells of sufficient size to supply the proper water supply.

It was resolved by the Board that the Secretary be instructed to send to each of those employed by the Board whose salaries were cut, a letter expressing appreciation of their past services and the regret at the fact that the Legislature had reduced their salaries.

On motion of Dr. Egleston, the following resolution was adopted: That suitable expression of our appreciation of Dr. C. V. Akin's services and assistance to the Executive Committee of the State Board of Health be prepared and incorporated in the minutes, and copy sent to Dr. Akin.

Dr. Egleston reported that the January inspection of the State Sanatorium was, on the whole, satisfactory and that when the several recommendations made from time to time by the doctors who inspected it are carried out, that conditions would be satisfactory, if such conditions were rigidly carried out. A committee consisting of Dr. Hayne, Miss Blackburn, and Dr. Lester, was appointed to see that the Acute Ward for colored

patients was immediately equipped and made ready for occupancy. A committee, consisting of Dr. Hayne, Miss Blackburn and Dr. Lester was appointed to determine the best method of procedure as to the length of stay of a patient at the Sanatorium. It was ordered by the Board that at the end of each six months' stay of a patient a physicial examination be made and report sent to this Committee by Dr. Cooper, and that the Committee then take up the matter of what disposition should be made of a patient, whether they should remain longer or be sent to their homes. Where there were indigent patients, it was directed that Miss Blackburn inquire into their ability to support themselves and if they were unable to support themselves to report their condition to the County Commissioners of the county from whence they came.

The Division of Malaria Control submitted the following salaries for 1922, which were approved:

Malaria Field Agent (R. S. Baynard)	$2400.00
Malaria Field Inspector (Wm. Weston)	2100.00
Malaria Field Inspector (Lindsley Arthur)	1800.00
Stenographer (Mary Dorn)	900.00

The Secretary was directed to write to Mr. Harry Hopkins, Manager, Southern Division, American Red Cross, in regard to the request of Mrs. Dodd, that the Red Cross supplement the salaries of the two nurses $75.00 each and the Director's salary $20.00 per month.

There being no further business, the Board adjourned to meet at the call of the Chairman at Rock Hill, Tuesday night April 18th, at 6:15 o'clock.

JAMES A. HAYNE, M. D.,
Secretary.

Attest:

Rock Hill, S. C., April 18, 1922.

The regular Annual Meeting of the State Board of Health, with South Carolina Medical Association was held in Rock Hill Tuesday, April 18, 1922, with the following members present: Dr. Robert Wilson, Jr., Dr. E. A. Hines, Dr. W. M. Lester, Dr. Wm. Egleston, Dr. Rob't. A. Marsh, Dr. S. C. Calder and the State Health Officer.

The minutes of the last meeting were read and approved.

Dr. Wilson read to the South Carolina Medical Association the report of the Executive Committee of the State Board of Health for the past year.

It was moved that the regular visits of the dentist to the Sanatorium be every two weeks, except in emergencies, and that in emergencies the patient be brought to the dentist.

The proposed plan of operation for the protection of maternity and infancy under the Sheppard-Towner Act was read and approved, as follows:

ACTIVITIES OF BUREAU.

1. To promote the establishment of public health nursing services, especially for home visiting.

2. To provide for instruction in the hygiene of maternity and the care of infants.

3. To provide for the registration and instruction of midwives through county health officers and public health nurses.

4. To promote the establishment of maternity hospitals or maternity wards in general hospitals.

5. To assist the Bureau of Vital Statistics secure the registration of all births.

6. To cooperate with State and local boards of education in the improvements of sanitary conditions of school buildings and grounds.

7. Through its public health nurses, to conduct physical inspection of school children and assist in the control of communicable diseases.

8. To promote the establishment of maternity and infant welfare centers for physical examinations and for instructions in the care and feeding of infants and children of pre-school age.

9. To promote clinics for the correction of physical defects of children.

10. To promote clinics for the examination and diagnosis of suspected tuberculosis patients.

11. To conduct educational campaigns and prepare and distribute literature regarding the protection of maternity, the prevention of infant mortality, and the conservation of child life.

Personnel:

Director (nurse).

Secretary.

2 District Supervising Nurses.

1 Negro Field Nurse (for registration and instruction of midwives).

Thirty-seven local public health nurses: These local nurses are employed by such agencies as County Delegations, Red Cross Chapters, Tuberculosis Associations, Chambers of Commerce, Mill Corporations, Women's Clubs, but have been working under directions of the Bureau and rendering monthly reports.

Nursing Program:

The activities of the Bureau as outlined above have been promoted through local nurses who carry out a generalized nursing program. From September 1st to March 1st, they are engaged in school nursing. During March, April and May, they concentrate upon intensive baby welfare work. During June, July and August, they emphasize tuberculosis. This does not mean at any period of the year, any phase of nursing is discontinued. For instance: babies, school children and tuberculosis patients are carried on the visiting lists during the entire year.

Tenative Plans for Extension of Work.

Personnel:

1. Pediatrist—Whose duty it shall be to act as official representative of the Bureau of Child Hygiene at County, State and National Medical Assemblies; to address public meetings; to write bulletins on the hygiene of maternity and infancy; newspaper articles; outlines of letters to expectant mothers, etc.; and to to preside at meetings of the Advisory Board.

2-4. Consultant Pediatrists—Who shall constitute an Advisory Board. The duties of this Board shall be to assist in the development of a working program; to suggest material for technical bulletins; to approve all literature published by the Bureau; to approve plans for educational campaigns; to address public meetings; to prepare short baby talks for the use of nurses or club women.

Nurse-Baby Specialist—Whose duties shall be to write bulletins on the care of the baby; letters to mothers; publicity articles;

short talks to be used by nurses and club women; to prepare outlines for health programs; to be responsible for exhibit material; to plan educational baby campaigns, conferences, surveys and exhibits; to assist pediatrists in field work, such as examinations of babies, instruction to mothers; to address public meetings; to assist local agencies, such as boards of health, nurses, women's clubs, or other organizations. in the development of child welfare projects. (This to be done largely in those counties not employing nurses. In those communities where a health officer or public health nurse is operating, she will work only in conjunction with them).

Nurse: Whose duty it shall be to supervise midwives, to supervise the activities of the colored field nurse.

Secretary: Whose duty it shall be to keep accounts; to file daily report cards of nurses; to attend to correspondence of Director; to be responsible for the mailing out of educational literature and letters to mothers.

Also, the following budget was approved:

PROPOSED EXPENDITURE OF FEDERAL AND STATE FUNDS.

APRIL 1ST—JUNE 30TH, 1922.

Source of Funds.

Amount available for expenditure for one fourth year of year of State appropriations for Bureau of Child Hygiene	
State Board of Health	$2,500 00
Federal-Sheppard-Towner outright gift	5,000 00
Federal-match fund—50% State appropriation	1,250 00
Total	$8,750 00

	Federal	State	Total
Salaries:			
Administration			
*Director—Bureau Child Hygiene	None	540 00	540 00
Professional:			
Pediatrists—Part time	125 00	None	125 00
Consultant Pediatrists per diem	125 00	None	125 00
*District Supervisors (2)	None	600 00	600 00
Nurse-midwife supervisor	450 00	None	450 00
Nurse-baby welfare—not on duty in this period.			
Clerical:			
Secretary	375 00	None	375 00
Secretary	None	330 00	330 00
Accountant—part time	150 00	None	150 00
Printing	450 00	175 00	625 00
Supplies	375 00	150 00	525 00
Express and Freight	25 00	8 00	33 00
Telegraph and Telephone	25 00	50 00	75 00
Travelling Expenses	500 00	500 00	1,000 00
Miscellaneous	400 00	147 00	547 00
	$3,000 00	$2,500 00	$5,500 00

*Salaries of these parties are augmented by outside agencies as
Director—$1,000 00 per year.
Supervisors—$900 00 per year each.

PERIOD ENDING JUNE 30TH, 1922

(APRIL 1ST—JUNE 30TH.)

FUNDS REQUESTED MATCHED BY FEDERAL APPROPRIATIONS—SHEPPARD-TOWNER.

Agency carrying on such work at present time.	Available for expenditure April 1st.	Time spent on maternity and baby wk.	Amount requested.
State Board of Health:			
Bureau of Child Hygiene	$2,500 00	50%	$1,250 00
Chester County—Public Health Nurse	625 00	25%	156 25
Clarendon County—Public Health Nurse	400 00	25%	100 00
Dillon County—Public Health Nurse	350 00	25%	87 50
Marion County—Public Health Nurse	600 00	25%	150 00
O. Tilghman Nurse (Baby welfare nurse)	750 00	100%	750 00
Charleston Public Health Nurses	375 00	100%	375 00
Beaufort County—Public Health Nurses	675 00	25%	168 75
State Board of Health:			
Bureau of Vital Statistics	1,200 00	16 6%	200 00
Bureau of Rural Sanitation	2,240 00	25%	560 00
			$3,797 50

Note:—The Bureau of Vital Statistics has no personnel available for the gathering of specific data on births, nor any money to follow up delinquent reporting, non-reporting, etc.

Note:—The Bureau of Rural Sanitation maintains county health departments in 5 counties. These departments consist of doctors as health officers, public health nurse, inspectors and social workers depending upon county appropriations in addition to State funds. We are listing as available for matching purposes the salary and travel expenses of the health officer as paid out of State appropriations, as this money is in the hands of the State Treasurer, and can obviate the counties placing their funds which are used to pay the salary of the public health nurse, other personnel and incidental expenses. The money alloted by the Federal Government for this item would revert to the *counties* in which the work is being carried on.

Note:—In counties, the funds from the Federal Government would revert to the counties maintaining the nursing service.

The Bureau of Child Hygiene would use the funds obtained from the Federal Government according to tentative budget attached.

It was moved by Dr. Egleston that the South Carolina Pediatric Association be asked to name two members of that Associa-

tion, one of whom should be elected Pediatrician for the Bureau of Child Hygiene under the Sheppard-Towner Act.

A letter was read from Mr. Fred S. Campbell, representing E. R. Squibb & Sons, New York, offering the same terms of contract for supplying the State Board of Health with biological products as for the previous year. The following letter was read from the Attorney-General, giving his opinion on whether the contract could be continued without giving bids:

Columbia, S. C., April 4, 1922.

"Dr. James A. Hayne,

Secretary and State Health Officer,

Columbia, S. C.

Dear Sir: Replying to your letter of the 31st ult., I advise that the stipulation in the contract between the State Board of Health and Squibbs, is only binding as between the parties, and has the effect of an *option* of which you may avail yourself from year to year.

While it might be a commendable policy to be observed, I readily appreciate that in certain instances the circumstances might be such as to recommend a departure from the policy, and I find nothing in the statute law pertaining to your department, which would require you to advertise for bids before renewing your contract with Squibbs if you feel warranted in doing so. But there should be a *new* contract for the year.

Very truly,

(Signed) Sam'l. M. Wolfe,
Attorney General."

It was moved and seconded that the contract be let to E. R. Squibb & Sons, New York, for the year beginning July 1, 1922 and ending June 30, 1923, but that bids be submitted the following year.

It was moved and seconded and a resolution was adopted expressing the deep sympathy for Dr. C. C. Gambrell in his illness, and the Secretary was directed to telegraph Dr. Gambrell to that effect.

The Board then went into Executive Session, and the following officers were elected: Dr. Robert Wilson, Chariman; Dr. James A. Hayne, Secretary and State Health Officer.

There being no further business, the Board adjourned to meet at the call of the Chairman.

JAMES A. HAYNE, M. D.,
Secretary.

Attest:

Columbia, S. C., July 12, 1922.

The regular quarterly meeting of the State Board of Health was held at the office of the Secretary at 12 o'clock, noon, on July 12, 1922, with the following members present: Dr. C. C. Gambrell, Dr. R. A. Marsh, Dr. W. M. Lester, Dr. E. A. Hines, Dr. Wm. Egleston, Dr. S. C. Calder and the Secretary. Dr. C. C. Gambrell acted as Chairman.

The minutes of the last meeting were read and approved.

Reports from the different departments were read and it was directed that the narrative reports from the head of each department be sent to each member of the State Board of Health.

A telegram was received from H. J. Hardin, York, notifying the Board of the death of its esteemed member, Dr. Miles J. Walker, of York. A committee consisting of Drs. Hayne, Hines and Marsh, was elected to prepare suitable resolutions in regard to the death of Dr. Walker, and it was voted that a page of the minutes be set aside upon which should be inscribed these resolutions; that the minutes be published in the papers, and a copy sent to Dr. Walker's family. Also, that a member of the Board attend the funeral of Dr. Walker, and that suitable floral tribute be sent by the State Board of Health to Dr. Walker's home at York.

The reports of inspections of the Sanatoria were read, and it was directed that a copy of these be sent to the Superintendent, and that he be directed to comply at once with the recommendations contained therein, and that he so indicate to the Board such recommendations as would be impossible for him to comply with on account of lack of funds.

Dr. Lester moved that a radio apparatus be installed at once at the Sanatorium for the benefit of the patients.

It was moved that the Building Committee see to it that sufficient building material be on hand, so that there might be no delay in the opening of the new ward.

A letter was read from the members of the Executive Board of the Palmetto Anti-Tuberculosis Association, requesting that their Secretary, Mrs. R. H. Walton, be paid a salary from November to July, 1922, out of the funds donated to the use of the Palmetto Sanatorium for the use of the patients at that Sanatorium. The Board felt that it could not use this fund, which had been given for a specific purpose, to pay the salary of Mrs. R. H. Walton, colored, and the Secretary was directed to so inform the members of the Executive Board of the Palmetto Anti-Tuberculosis Association.

A letter was read from Mrs. Ruth A. Dodd, Director of the Bureau of Child Hygiene, requesting a raise in salary of $15.00 per month for Miss Mary McMillan, stenographer. This was approved, provided the salary could be paid out of the Sheppard-Towner fund.

A letter was read from James E. Schneider, patient at the Sanatorium, requesting that he be allowed to stay longer at the Sanatorium. It was requested that a letter be written Mr. Schneider, and that he be informed his request was granted, but that he be directed to leave the Sanatorium by December 1, 1922.

Dr. Egleston requested that Dr. Hayden, State Epidemiologist, and Mr. Filby, State Sanitary Engineer, visit Hartsville in order to determine the cause of an epidemic of typhoid fever near there.

The State Board of Health, upon motion of Dr. Gambrell, went on record as approving of tonsilar and adenoid clinics held under the auspices of the State Board of Health, provided the rules and regulations of the State Board of Health in regard to such clinics were complied with.

Upon recommendation of the State Pediatric Association, Dr. Wm. P. Cornell was unanimously elected by ballot as Pediatrician for the Board of Health. Dr. Robert E. Seibles was appointed on the advisory board of pediatricians.

In view of the fact that many cities, industrial communities, schools and public buildings are installing sewerage and sewage treatment plants, and in view of the fact that improper con-

struction and disposal may create a nuisance dangerous to the health and comfort of the public, the Board adopted and ordered promulgated the following regulations:

1. All plans for sewerage and sewage disposal for cities, industrial communities, schools and public buildings shall be submitted in duplicate to the State Board of Health for their approval.

2. No construction work shall commence until the plans have been approved, and construction shall follow said approved plans, unless changes have been submitted and approved by the State Board of Health.

There being no further business, the Board adjourned to meet at the call of the Chairman.

JAMES A. HAYNE, M. D.,
Secretary.

Attest:

Columbia, S. C., October 5, 1922.

The regular meeting of the Executive Committee of the State Board of Health was held in the office of the Secretary, 204 Palmetto Building, Columbia, S. C., October 5, 1922, with the following members present: Dr. Robert Wilson, Jr., Chairman, Dr. Rob't. A. Marsh, Dr. Wm. Egleston, Dr. E. A. Hines, Dr. C. C. Gambrell, Dr. Wm. Lester, Dr. S. C. Calder, and the Secretary.

The minutes of the last meeting were read and approved.

Reports were read from the various departments as follows: Malaria Control, Bureau of Vital Statistics, Hygenic Laboratory, Rural Sanitation, Bureau of Child Hygiene and South Carolina Sanatorium.

A letter was read from Dr. P. D. Brooker, submitting a proposition for the sale of a chair, cuspidor, electric engine and cabinet included, as dental equipment for the South Carolina Sanatorium. The Board directed that this equipment be purchased.

Letter was read from Dr. Jean LaBorde, City Health Officer, requesting the State Health Officer to appoint him as Registrar of Vital Statistics for Columbia District. The Board elected that Dr. LaBorde be so appointed, to take effect January 1, 1923.

The resignation of Dr. F. A. Coward was submitted and accepted by the Board, to take effect August 1, 1922.

Mrs. R. A. Dodd, Director of the Bureau of Child Hygiene, appeared before the Board and submitted her regisnation, to take effect January 1, 1923. The Board granted Mrs. Dodd leave of absence from December 1, to December 31, inclusive, when her resignation will take effect.

A committee, consisting of Dr. Hayne, Dr. Hines and Dr. Egleston, was appointed to draw up suitable resolutions in regard to the services of Mrs. Dodd, retiring Director of the Bureau of Child Hygiene.

The resignation of Dr. Wm. Weston as a member of the Advisory Board of the Children's Bureau of the State Board of Health, was read and accepted with regret. Dr. Samuel G. Glover of Greenville was appointed in his place.

The Board went into the election of a member to fill the vacancy caused by the death of Dr. Miles J. Walker, of York, and Dr. W. R. Wallace, of Chester, was elected. The Secretary was directed to notify the Governor of this nomination and to request that a commission be issued Dr. Wallace.

The Secretary was directed to instruct the State Epidemiologist, Dr. A. H. Hayden, and the State Sanitary Engineer, Mr. E. L. Filby, to visit Winthrop and Clemson Colleges, and make a survey of these two institutions and submit a report to the Committee in charge of inspections of State educational institutions.

There was considerable discussion in regard to the publishing of the experiment at Garnett, and the formation there of "Keep Well" culbs. It was decided that it would not be wise for the Executive Committee of the State Board of Health to publish this officially until the matter had been submitted to the component Medical Societies of the South Carolina Medical Association and action taken by them at the regular meeting of the South Carolina Medical Association.

The Standard Railway Sanitary Code, copy of which is hereto attached, was approved by the Board and adopted as regulations of the South Carolina State Board of Health.

There being no further business, the Board adjourned to meet at the call of the Chairman.

JAMES A. HAYNE, M. D.,
Secretary.

Attest:

STANDARD RAILWAY SANITARY CODE.

Approved by the Conference of State and Provincial Health Authorities of North America, May 25, 1920, amended June 2, 1921, and recommended by the Conference to the several States for adoption.

In accordance with the recommendation the Standard Railway Sanitary Code has been adopted in the following States: Alabama, Florida, Georgia, Illinois, Kansas, Kentucky, Louisiana, Maine, Maryland, Michigan, Minnesota, Mississippi, New Hampshire, Tennessee, Virginia, Washington, West Virginia, Wisconsin.

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STANDARD RAILWAY SANITARY CODE.

1. TRANSPORTATION OF PERSONS HAVING COMMUNICABLE DISEASES.

SECTION 1. *Persons not allowed to travel.*—No person knowing or suspecting himself to be afflicted with plague, cholera, smallpox, typhus fever, or yellow fever, shall apply for, procure or accept transportation in any railway train, car, or other conveyance of a common carrier, nor shall any person apply for, procure, or accept such transportation for any minor, ward, patient, or other person under his charge if known or suspected to be so afflicted.

SECTION 2. *Persons not accepted for travel.*—Common carriers shall not accept for transportation in any railway train, car, or other conveyance, any person known by them to be afflicted with any of the diseases enumerated in section 1.

SECTION 3. *Restricted travel.*—Common carriers shall not accept for transportation on any railway train, car, or other conveyance, any person known by them to be afflicted with diptheria, measles, scarlet fever, epidemic cerebro-spinal meningitis, anterior poliomyelitis, mumps, whooping cough, influenza, pneumonia, epidemic encephalitis, septic sore throat, rubella, or chicken pox, or any person known to be a carrier of these diseases, unless such person is placed in a compartment separate from other passengers, is accompanied by a properly qualified

nurse or other attendant, and unless such nurse or attendant shall agree to comply and does so comply with the following regulations:

(a) Communication with the compartment within which the patient is traveling shall be restricted to the minimum consistent with the proper care and safety of the patient.

(b) All dishes and utensils used by the patient shall be placed in a 5 per cent solution of carbolic acid or other fluid of equivalent disinfecting value for at least one hour after they have been used and before being allowed to leave the compartment.

(c) All sputum and nasal discharges from the patient shall be received in gauze or paper, which shall be deposited in a paper bag or in a closed vessel, and shall be destroyed by burning.

(d) Said nurse or attendant shall, after performing any service to the patient, at once cleanse the hands by washing them in a 2 per cent solution of carbolic acid or other fluid of equivalent disinfecting value.

SECTION 4. *Typhoid and dysentery.*—Common carriers shall not accept for transportation on any railway train, car, or other conveyance, any person known by them to be afflicted with typhoid fever, paratyphoid fever, or dysentery, unless said person is placed in a compartment separate from the other passengers, is accompanied by a properly qualified nurse or other attendant, and unless said nurse or attendant shall agree to comply and does so comply with the following regulations:

(a) Communication with the compartment in which the patient is traveling shall be limited to the minimum consistent with the proper care and safety of the patient.

(b) All dishes and utensils used by the patient shall be placed in a 5 per cent solution of carbolic acid or other fluid of equivalent disinfecting value for at least one hour after they have been used and before being allowed to leave the compartment.

(c) All urine and feces of the patient shall be received into a 5 per cent solution of carbolic acid or other fluid of equivalent disinfecting value, placed in a covered vessel, thoroughly mixed, and allowed to stand for at least two hours after the last addition thereto before being emptied.

(d) A sheet of rubber or other impervious material shall be carried and shall be spread between the sheet and the mattress of any bed that may be used by the patient while in transit.

(e) Said nurse or attendant shall use all necessary precautions to prevent the access of flies to the patient or his discharges, and after performing any service to the patient, shall at once cleanse the hands by washing them in a 2 per cent solution of carbolic acid or other fluid of equivalent disinfecting value.

(f) *Provided,* That if a person with typhoid or dysentery is presented at a railway station in ignorance of these regulations, and his transportation is necessary as a life-saving or safe guarding measure, an emergency may be declared and the patient may be carried a reasonable distance in a baggage car if accompanied by an attendant responsible for his care and removal: *Provided also*, That regulations (a), (b), (c), (d), and (e) of this section shall be complied with in so far as the circumstances will allow, and that all bedding, clothing, rags or cloths used by the patient shall be removed with him: And *provided further*, that any parts of the car which have become contaminated by any discharges of the patient shall be disinfected as soon as practicable, but not later than the end of the run, by washing with a 5 per cent solution of carbolic acid or other fluid of equivalent disinfecting value.

SECTION 5. *Restricted application for transportation.*—No person knowing or suspecting himself to be afflicted with any of the diseases mentioned in sections 3 and 4 shall apply for, procure, or accept transportation in any railway train, car, or other conveyance of a common carrier, nor shall any person apply for, procure, or accept such transportation for any minor, ward, patient, or other person under his charge, if known or suspected to be so afflicted, unless he shall have agreed to and made all necessary arrangements for complying and does so comply with the regulations set forth in said sections 3 and 4.

SECTION 6. *Suspected cases.*—If a conductor or other person in charge of a railway train, car, or other conveyance of a common carrier, or an agent or other person in charge of a railway station, shall have any reason to suspect that a passenger or a person contemplating passage is afflicted with any of the diseases enumerated in sections 1, 3 and 4, he shall notify

the nearest health officer, or company physician, if the health officer is not available, by the quickest and most practicable means possible, of his suspicions, and said health officer or physician shall immediately proceed to the train, car, or other conveyance at the nearest possible point, or to the railway station, to determine whether such disease exists.

SECTION 7. *Disposition.*—If the health officer or physician, as provided for in section 6, shall find any such person to be afflicted with any of the diseases enumerated in section 1, 3 and 4, he shall remove such person from the station or conveyance, or shall isolate him and arrange for his removal at the nearest convient point; shall treat the car or other conveyance as infected premises, allowing it to proceed to a convenient place for proper treatment if in his judgment consistent with the public welfare, in such case notifying the health officer in whose jurisdiction the place is located; and shall take such other measures as will protect the public health: *Provided*, That if not prohibited in sections 1 and 2 of these regulations the afflicted person so found may be allowed to continue his travel if arrangements are made to comply, and he does so comply, with the requirements of the section of these regulations pertaining to the disease with which he is afflicted.

SECTION 8. *Leprosy.*—Common carriers shall not accept for transportation nor transport in any railway train, car, or other conveyance, any person known by them to be afflicted with leprosy, unless such person presents permits from the Surgeon General of the United States Public Health Service or his accredited representative, and from the State Department of Health of the State from which and to which he is traveling, stating that such person may be received under such restrictions as will prevent the spread of the disease, and said restrictions shall be specified in each instance; and no person knowing or suspecting himself to be afflicted with leprosy, nor any person acting for him, shall apply for, procure, or accept transportation from any common carrier unless such permits have been received and are presented, and unless the person so afflicted agrees to comply and does so comply with the restrictions ordered. If any agent of a common carrier shall suspect that any person in a train, car, or other conveyance, or at a railway station, is afflicted with leprosy, he shall proceed as directed in the case of other suspected diseases in sections 6 and 7 of these regulations.

SECTION 9. *Pulmonary tuberculosis.*—Common carriers shall not accept for transportation any person known by them to be afflicted with pulmonary tuberculosis in a communicable stage unless said person is provided with (a) a sputum cup made of impervious material and so constructed as to admit of being tightly closed when not in use, (b) a sufficient supply of gauze, papers, or similar articles of the proper size to cover the mouth and nose while coughing or sneezing, (c) a heavy paper bag or other tight container for receiving the soiled gauze, paper, or similar articles; and unless such person shall obligate himself to use the articles provided for in the manner intended and to destroy said articles by burning or to disinfect them by immersing for at least one hour in a 5 per cent solution of carbolic acid or other solution of equivalent disinfecting value; nor shall any person knowing himself to be so afflicted apply for, procure, or accept transportation unless he shall have agreed to and made all necessary arrangements for complying and does so comply with the regulations as set forth in this section.

SECTION 10. *Conveyances vacated by infected persons.*—Immediately after vacation by a person having any of the diseases mentioned in sections 1, 3, 4 and 8, any berth, compartment, or stateroom should be closed and not again occupied until properly cleaned and disinfected, and all bedding, blankets and linen in any such place should be laundered or otherwise thoroughly cleaned and disinfected before being again used.

II. WATER AND ICE SUPPLIES.

SECTION 11. *Water to be Certified.*—Water provided by common carriers for drinking or culinary purposes in railway trains, cars, or other conveyances, or in railway stations, shall be taken from supplies certified by the United States Public Health Service as meeting the required standards of purity and safety prescribed by the Interstate Quarantine Regulations of the United States.

SECTION 12. *Ice.*—Ice used for cooling water provided as in section 11, shall be clear natural ice, ice made from distilled water, or ice made from water certified as aforesaid; and before the ice is put into the water it shall be washed with water of known safety, and handled in such a manner as to prevent

its becoming contaminated by the organisms of infectious diseases; *Provided*, That the foregoing shall not apply to ice that does not come in contanct with the water to be cooled.

SECTION 13. *Water containers.*—Water containers in newly constructed cars shall be so constructed that ice for cooling does not come in contact with the water to be cooled: *Provided*, That after July 1, 1924, all water containers in cars shall be so constructed that ice does not come in contact with the water.

SECTION 14. *Care of water containers.*—All water containers where water and ice are put into the same compartment shall be thoroughly cleansed at least once in each week that they are in use. All water containers and water storage tanks shall be thoroughly drained and flushed at intervals of not more than one month.

SECTION 15. *Filling water containers.*—Portable hose or tubing that is used for filling drinking-water containers, or car storage tanks from which such containers are filed, shall have smooth metal nozzles which shall be protected from dirt and contamination; and before the free end or nozzle of said hose or tubing is put into the water container or car storage tank it shall be flushed and washed by a plentiful stream of water.

III. CLEANING AND DISINFECTION OF CARS.

SECTION 16. *General.*—All railway passenger cars or other public conveyances shall be kept in a reasonably clean and sanitary condition at all times when they are in service, to be insured by mechanical cleaning at terminals and layover points.

SECTION 17. *Cleaning.*—All day coaches, parlor cars, buffet cars, dining cars, and sleeping cars shall be brushed, swept, and dusted at the end of each round trip, or at least once in each day they are in service, and shall be thoroughly cleaned at intervals of not more than seven days.

SECTION 18. *Thorough cleaning.*—Thorough cleaning shall consist of scrubbing the exposed floors with soap and water; similarly scrubbing the toilets and toilet-room floors; wiping down the woodwork with moist or oiled cloths; thorough dusting of upholstery and carpets by beating and brushing, or by means of the vacuum process or compressed air; washing or otherwise cleaning windows; and the thorough airing of the car and its contents.

SECTION 19. *Odors in cars.*—When offensive odors appear in toilets or other parts of the car which are not obliterated and removed by cleaning as in section 18, said toilets or other parts of the car shall be treated with a 2 per cent solution of formaldehyde or other odor-destroying substance.

SECTION 20. *Vermin in cars.*—Whenever a car is known to have become infested with bedbugs, lice, fleas, or mosquitoes, such car shall be so treated as to effectively destroy such insects, and it shall not be used in service until such treatment has been given.

IV. CARS IN SERVICE.

SECTION 21. *Cleaning.*—The cleaning of cars while occupied shall be limited to the minimum consistent with the maintenance of cleanly conditions, and shall be carried out so as to cause the least possible raising of dust or other annoyance to passengers.

SECTION 22. *Sweeping.*—Dry sweeping of the interior of a car in transit with an ordinary broom is prohibited.

SECTION 23. *Dusting.*—Dry dusting of the interior of a car in transit is prohibited.

SECTION 24. *Brushing.*—The brushing of passengers' clothing in the body of the car in transit is prohibited.

SECTION 25. *Drinking cups.*—Individual drinking cups in sufficient number shall be supplied in all cars, and the use of common drinking cups is prohibited.

SECTION 26. *Towels.*—The supplying of roller towels for common use in cars is prohibited.

SECTION 27. *Comb and brush.*—The supplying of combs and brushes for common use in cars is prohibited.

SECTION 28. *Spitting.*—Spitting on the floors, carpets, walls, or other parts of cars by passengers or other occupants of them is prohibited.

SECTION 29. *Cuspidors.*—An adequate supply of cuspidors shall be provided in all sleeping cars, smoking cars, and smoking compartments of cars while in service. Said cuspidors shall be cleaned at the end of each trip, and oftener if their condition requires.

SECTION 30. *Brushing of teeth.*—Spitting into, blowing the nose into, or brushing the teeth over wash basins in cars is prohibited. Separate basins for brushing the teeth shall be provided in the wash rooms of sleeping cars.

SECTION 31. *Drinking water and ice.*—Drinking water and ice on railway cars shall be supplied in accordance with the conditions set forth in sections 11, 12, 13, 14 and 15 of these regulations.

SECTION 32. *Ventilation and heating.*—All cars when in service shall be provided with an adequate suppliy of fresh air, and in cold weather shall be heated so as to maintain comfort. When artificial heat is necessary, the temperature should not exceed 70° F., and in sleeping cars at night after passengers have retired, it should not exceed 60° F.

SECTIJO 33. *Toilets in cars.*—A proper toilet room and lavatory shall be provided in all railway passenger cars for the use of their occupants. Such toilet shall be supplied with toilet paper, soap and free or pay clean towels, and shall be kept in a clean and sanitary condition. *Provided*, That cars used exclusively in suburban service are not required to be so equipped.

SECTION 34. *Toilets to be locked.*—The toilet rooms in all railway cars shall be locked or otherwise protected from use while trains are standing at stations, passing through cities, or passing over waterheads draining into reservoirs furnishing domestic water supplies, unless adequate water-tight containers are securly placed under the discharge pipe. The State Health authority having jurisdiction shall designate the area of watersheds that may be affected by pollution from railroads and shall notify the managing officers of railroads as to the points between which all toilets shall be locked.

SECTION 35. *Lavatories in dining cars.*—A lavoratory shall be provided in all dining cars for the use of dining car employees, and the same shall be supplied with soap and clean towels, and shall be kept in a clean and sanitary condition. Such lavatory shall have no direct connection with the kitchen, pantry, or other places where food is prepared. The word "dining car" as used in these regulations shall be held to include all cars in which food is prepared and served.

SECTION 36. *Dining cars to be screened.*—Dining cars shall be screened against the entrance of flies and other insects, and it shall be the duty of dining car employees to destroy flies or other insects that may gain entrance.

SECTION 37. *Dining car employees to cleanse hands.*—Dining car employees shall thoroughly cleanse their hands by washing with soap and water after using a toilet or urinal, and immediately before beginning service.

SECTION 38. *Care of tableware.*—All cooking, table and kitchen utensils, drinking glasses and crockery used in the preparation or serving of food or drink in dining cars shall be thoroughly washed in boiling water and suitable cleansing material after each time they are used.

SECTION 39. *Food containers.*—Refrigerators, food boxes, or other receptacles for the storing of fresh food in dining and buffet cars shall be emptied and thoroughly washed with soap and hot water at least once in each seven days that they are in use.

SECTION 40. *Food and milk.*—No spoiled or tainted food, whether coked or uncooked, shall be served in any dining car; and no milk or milk products shall be served unless the milk has been pasteurized or boiled.

SECTION 41. *Garbage.*—Garbage cans in sufficient number, and with suitable tight-fitting covers, shall be provided in dining cars to care for all refuse food and other wastes, and such wastes shall not be thrown from the car along the right of way within the limits of cities, towns, or villages, or within drainage areas furnishing domestic water supplies.

SECTION 42. *Dining car inspection.*—The person in charge of the dining car shall be responsible for compliance with all dining car regulations, and he shall make an inspection of the car each day for the purpose of maintaining a rigorous cleanliness in all portions thereof.

SECTION 43. *Examination of food handlers.*—No person shall serve as a cook, waiter, or in any other capacity in the preparation or serving of food in a dining car who is known or suspected to have any dangerous communicable disease. All persons employed for such service shall undergo a physical examination by a competent physician before being assigned to service, and before returning to work after any disabling illness, and

at such other times during their service as may be necessary to determine their freedom from such diseases, and shall be immediately relieved from service if found to be so afflicted.

V. RAILWAY STATIONS.

SECTION 44. *General.*—All railway stations, including their waiting rooms, lunch rooms, restaurants, wash rooms, and toilets, shall be kept in a clean and sanitary condition at all times, to be insured by mechanical cleaning at regular intervals.

SECTION 45. *Cleaning.*—All waiting rooms and other rooms used by the public shall be swept and dusted daily; and at intervals of not more than seven days the floors shall be scrubbed with soap and water, and the seats, benches, counters, and other woodwork shall be similarly scrubbed, or shall be rubbed down with a cloth moistened with oil.

SECTION 46. *Sweeping.*—If sweeping is done while rooms are occupied or open to occupancy by patrons, the floor shall be first sprinkled with wet sawdust or other dust-absorbing material.

SECTION 47. *Dusting.*—If dusting is done while rooms are occupied or open to occupancy by patrons, it shall be done only with cloths moistened with water, oil, or other dust-absorbing material.

SECTION 48. *Spitting.*—Spitting on the floors, walls, seats or platforms of railway stations is prohibited.

SECTION 49. *Cuspidors.*—In all waiting rooms where smoking is permitted, an adequate supply of cuspidors shall be provided; such cuspidors shall be cleaned daily, and oftener if their condition requires.

SECTION 50. *Common cups.*—Individual drinking cups in sufficient number shall be supplied in all stations, and the use of common drinking cups is prohibited.

SECTION 51. *Common towels.*—The supplying of roller towels or other towels for common use in railway stations is prohibited.

SECTION 52. *Combs and brushes.*—The supplying of combs and brushes for common use in railway stations is prohibited.

SECTION 53. *Toilet facilities.*—All railway stations where tickets are sold shall provide adequate toilet facilities, of a de-

sign approved by the State Department of Health, for the use of patrons and employes; and there shall be separate toilets for each of the two sexes.

SECTION 54. *Station toilets.*—If a railway station is located within 300 feet of a public sewer, water flushing toilets shall be installed and permanently connected with such sewer, and a wash basin or basins shall be located near the toilet and similarly connected; and such toilets and lavatories shall be kept in repair and in good working order at all times.

SECTION 55. *Care of toilets.*—All toilets installed as set forth in section 54, shall be cleaned daily by scrubbing the floors, bowls and seats with soap and water.

SECTION 56. *Odors in toilets.*—When offensive odors appear in toilets which are not obliterated and removed by cleaning as in section 55, said toilets shall be treated with a 2 per cent solution of formaldehyde or other odor-destroying substance.

SECTION 57. *Toilet supplies.*—Toilets and wash rooms installed as set forth in section 54, shall be constantly furnished with an adequate supply of toilet paper, soap and free or pay clean towels.

SECTION 58. *Privies.*—If no sewer connection is available as set forth in section 54, a sanitary privy of a design approved by the State Department of Health shall be maintained within a reasonable distance from the station. Such privy shall be adequately protected against the entrance of flies, shall be kept supplied with toilet paper, the seats shall be kept clean, and the vaults shall be treated with sodium hydrate or other approved disinfectant at least once in each week and shall be cleaned out and emptied at such intervals as will avoid the development of a nuisance.

SECTION 59. *Drinking water and ice.*—Drinking water and ice in railway stations shall be supplied in accordance with sections 11, 12, 13, 14 and 15 of these regulations.

SECTION 60. *Water not usable for drinking.*—If water which does not conform to the standards set forth in section 11, of these regulations is available at any tap or hydrant or in a railway station, a notice shall be maintained on each such tap or hydrant which shall state in prominent letters, "Not fit for drinking."

SECTION 61. *Drinking fountains.*—If drinking fountains of the bubbling type are provided in any railway station, they shall be so made that the drinking is from a free jet projected at an angle to the vertical and not from a jet that is projected vertically or that flows through a filled cup or bowl.

SECTION 62. *Refuse cans.*—At all railway stations where there is an agent there shall be provided and maintained an adequate supply of open or automatically closing receptacles for the disposition of refuse and rubbish, and such receptacles shall be emptied daily and kept reasonably clean and free from odor.

SECTION 63. *Cisterns, cesspools, etc.*—All cisterns, water-storage tanks and cesspools in or about railway stations shall be adequately screened against the entrance of mosquitoes, and all collections of surface water on station property shall be drained or oiled during the season of mosquito flight, to prevent the breeding of mosquitoes.

SECTION 64. *Restaurants to be screened.*—All restaurants and lunch rooms, or other places where food is prepared or served in a railway station, shall have doors and windows adequately screened against the entrance of flies during the season of flight of these insects; and all food on display or storage racks shall be adequately covered.

SECTION 65. *Lavatories for restaurants.*—A lavatory of easy and convenient access shall be provided for the use of employes in every restaurant or lunch room in any railway station, and it shall be provided with an adequate supply of water, soap and clean towels.

SECTION 66. *Restaurant employes.*—Restaurant employes who are engaged in the preparing or serving of food, shall thoroughly cleanse their hands by washing with soap and water after using a toilet or urinal, and immediately before beginning service.

SECTION 67. *Kitchen and table utensils.*—All cooking, table and kitchen utensils, drinking glasses and crockery used in the preparation or serving of food or drink in railway restaurants or lunch rooms shall be thoroughly washed in boiling water and suitable cleansing material after each time they are used.

SECTION 68. *Food containers.*—Refrigerators, food boxes, or other receptacles for the storing of fresh food in railway restaurants or lunch rooms shall be emptied and thoroughly washed with soap and hot water at least once in each seven days that they are in use.

SECTION 69. *Garbage.*—Garbage cans in sufficient number, and with suitable tight-fitting covers, shall be provided in all restaurants and lunch rooms to care for all refuse food and other wastes; and such cans shall be emptied daily in an approved place and kept in a clean and sanitary condition.

SECTION 70. *Restaurant inspection.*—The manager, chief, or other person in charge of any railway restaurant or lunch room shall be responsible for compliance with all regulations pertaining thereto, and he shall make an inspection of the premises daily for the purpose of maintaining a rigorous cleanliness in all parts thereof.

SECTION 71. *Station inspection.*—The agent, manager, or other person in charge of any railway station shall be responsible for compliance with all regulations pertaining thereto, and he shall make, or have made by a responsible person reporting to him, frequent inspections of the premises for the purpose of maintaining a rigorous compliance with all such regulations.

SECTION 72. *Examination of food handlers.*—No person shall serve as a cook, waiter, or in any other capacity in the preparation or serving of food in a railway restaurant or lunch room who is known or suspected to have any dangerous communicable disease. All persons employed for such service shall undergo a physical examination by a competent physician before being assigned to service, and before returning to work after any disabling illness, and at such other times during their service as may be necessary to determine their freedom from such diseases, and shall be immediately relieved from service if found to be so afflicted.

VI. CONSTRUCTION CAMPS.

SECTION 73. *Definition.*—For the purposes of these regulations railway construction camps shall be considered to include all camps and similar places of temporary abode, including those on wheels, established by or for the care of working forces engaged in the construction, repair, or alteration of railway properties or parts thereof: *Provided*, That camps which are occupied by less than five people, or camps which are established to meet emergency conditions and are not occupied longer than five days, shall not be included, except that section 90, of these regulations shall apply to them.

SECTION 74. *General.*—All camps shall be so located and so maintained as to be conducive to the health of their occupants, and not to endanger the health of the public; and all tents, houses, stables, or other structures therein shall be kept in a reasonably clean and sanitary condition at all times.

SECTION 75. *Location.*—Camps, except those on wheels, should be located on high, well drained ground; any natural sink holes, pools or other surface collections of water in the immediate vicinity should be drained and filled when the camp is first established; and all such water not subject to complete drainage should have the surface oiled at intervals of not more than seven days during the season of mosquito flight.

SECTION 76. *Arrangement.*—The general scheme of relations of the structures of a camp should be as follows: The kitchen should be located at one end of the camp; next to this should be the eating quarters, then the sleeping quarters, then the toilets for the men, then the stable, thus bringing the kitchen and the stable at opposite ends of the camp, which should be as far apart as is consistent with the natural topography and the necessity for convenient access.

SECTION 77. *Water supplies.*—All water supplies for camps shall be properly chlorinated, unless obtained from a source which has been approved by the State Department of Health.

SECTION 78. *Water containers.*—All drinking-water containers in camps shall be securely closed and so arranged that water can be drawn only from a tap, and said containers shall be kept clean and free from contamination.

SECTION 79. *Garbage and refuse.*—All garbage, kitchen wastes and other rubbish in camps shall be deposited in suitably covered receptacles, the contents of which shall be emptied and burned each day; and manure from the stables shall be likewise collected and burned each day, or disposed of in some other manner approved by the State Department of Health.

SECTION 80. *Scavenger.*—In all camps where there are 100 men or more there shall be one employe whose duty shall be to act as scavenger and garbage collector.

SECTION 81. *Toilets.*—Every camp shall have an adequate number of latrines and urinals, so constructed and maintained as to prevent fly breeding and the pollution of water, and the use of such latrines and urinals by the inhabitants of the camp

shall be made obligatory. Latrines and urinals may consist of deep trenches covered with houses adequately screened against flies, or of any other type approved by the State Department of Health. They shall not be located within less than 200 feet of any spring, stream, lake, or reservoir forming part of a public or private water supply.

SECTION 82. *Washing facilities.*—There shall be provided in all camps adequate washing facilities for the use of the occupants thereof.

SECTION 83. *Screening.*—The kitchen, eating houses and bunk houses of all camps shall be effectively screened against the entrance of flies and mosquitoes during the seasons of flight of these insects.

SECTION 84. *Care to tableware.*—All cooking, table and kitchen utensils, drinking glasses and crockery used in the preparation or serving of food or drink in camps shall be thoroughly washed in boiling water and suitable cleansing material after each time they are used.

SECTION 85. *Food containers.*—Refrigerators, food boxes, or other receptacles for the storing of fresh food in camps shall be emptied and thoroughly washed with soap and hot water at least once in each seven days that they are in use.

SECTION 86. *Food and milk.*—No soiled or tainted food, whether cooked or uncooked, shall be served in any camp; and no milk or milk products shall be served unless the milk has been pasteurized or boiled.

SECTION 87. *Examination of food handlers.*—No person shall be employed as a cook, waiter or in any other capacity in the preparation or serving of food in any camp who is known or suspected to have any dangerous communicable disease. All persons employed for such service shall undergo a physical examination by a competent physician before being assigned to service, and before returning to work after any disabling illness, and at such other times during their service as may be necessary to determine their freedom from such diseases and shall be immediately relieved from service if found to be so afflicted.

SECTION 88. *Sick persons.*—When an occupant of a camp becomes sick with a dangerous communicable disease, he shall be immediately isolated, and the health officer within whose jurisdiction the camp is located shall be immediately notified.

SECTION 89. *Vermin.*—It shall be the duty of some one appointed as caretaker of the camp to make regular weekly inspections of the occupants and premises in order to ascertain the presence of lice or other vermin. Persons found to be infested shall be required to bathe, and their clothing shall be boiled; and the premises found to be infested shall be fumigated with sulphur or treated by some other effective vermin-destroying method.

SECTION 90. *Abandoned camps.*—When any camp is to be abandoned, all garbage, rubbish, and manure shall be collected and burned, the latrine trenches filled and the grounds and buildings shall be left in a clean and sanitary condition.

SECTION 91. *Duty to enforce regulations.*—It shall be the duty of the superintendent, foreman, or other person in charge of a camp to see that all regulations pertaining thereto are faithfully complied with.

Columbia, S. C., December 12, 1922.

A regular meeting of the Executive Committee of the State Board of Health was held in the office of the Secretary, at 10 o'clock A. M., December 12, 1922, with the following members present: Dr. Robert Wilson, Jr., Chairman, Dr. Rob't. A. Marsh, Dr. C. C. Gambrell, Dr. E. A. Hines, Dr. Wm. Egleston, Dr. W. R. Wallace (new member of the Board), Dr. Wm. Lester, Dr. S. C. Calder and the Secretary.

The minutes of the last meeting were read and approved.

The departments made their annual reports as follows: Malaria Control, Bureau of Vital Statistics, Hygienic Laboratory, Rural Sanitation, South Carolina Sanitoria and Bureau of Child Hygiene.

The Malaria Control report was especially commended, and the State Health Officer was directed to extend the thanks of the Board to Captain Fisher for the efficient work done by these departments during the past year.

The Board expressed appreciation of the extensive and conscientious survey made of Winthrop and Clemson Colleges by the State Sanitary Engineer and the State Epidemiologist.

Upon the reading of the Laboratory report, the following resolution was adopted: "That the portion of the Laboratory report having to do with rabies, be given in its entirety to

the press of the State, daily and weekly. Further, that we recommend and urge the Legislature to enact a law for the compulsory prophylatic vaccination of all dogs against rabies."

The Secretary was authorized to let a contract for the painting of the Palmetto Sanatorium.

The reports of Standing Committees were then read. These consisted of, The Committee on State Penal and Charitable Institutions, Dr. C. C. Gambrell, Chariman; Committee on State Educational Institutions, Dr. Wm. Egleston, Chariman.

Under the report of Special Agents were read the report of the State Sanitary Engineer, Hotel Inspector and the Collaborating Epidemiologist. The work of these gentlemen was highly commended by the Board, especially the work of the State Epidemiologist.

Miss Jane Van de Vrede, in charge of the Nursing Service of the Southeastern Section of the American Red Cross, appeared before the Board and at the request of the Board, suggested the name of a suitable nurse for election to the vacancy as Director of the Bureau of Child Hygiene caused by the resignation of Mrs. Ruth A. Dodd. Miss Van de Vrede recommended Miss Ada Graham, of Mt. Vernon, Ohio. Miss Van de Vrede spoke very highly of the work of Miss Graham, and upon her recommendation Miss Graham was elected, subject to the approval of the State Health Officer. It was directed that the State Health Officer have a personal interview with Miss Graham, and that his expenses from Chicago and return be defrayed by the Board of Child Hygiene.

A committee was appointed to pass suitable resolutions in regard to the death of Dr. F. A. Coward. The committee consisted of Dr. Hayne and Dr. Egleston.

The State Health Officer was also directed to express in writing to Mrs. Dodd the appreciation of the Board for the work done by her in establishing the Bureau of Child Hygiene, and the regret of the Board at her resignation, and also to tender to her the best wishes of the Board for her future.

There being no further business, the Board adjourned to meet at the call of the Chairman.

JAMES A. HAYNE, M. D.,
Secretary.

Attest:

REPORT ON PENAL AND CHARITABLE INSTITUTIONS.

To the Chairman and Members of the Executive Committee, South Carolina State Board of Health:

Gentlemen: As a member of the committee appointed by your Board to make the annual sanitary inspection of the Penal and Charitable Institutions of this State, I beg to advise that the State Hospital was inspected on October the 11th.

As pointed out last year, the institution is still overcrowded, particularly in its quarters for white men, and both sexes of the colored race. There were on this date 2,428 patients in the Hospital, 633 white men, 717 white women, 584 colored men and 494 colored women. With the exception of the somewhat over-crowded condition in the sleeping quarters of the white male patients, evrything pertaining to the sanitation and care of the white patient was found in a most excellent condition. This part of the Hospital should be a source of pride to every person in South Carolina.

In the re-modeling of the institution every phase of modern sanitation has been considered, and the Hospital is splendidly squipped with modern plumbing, bathing facilities, ventilation and heating. The kitchens and dining rooms measure up to the highest standard of sanitation. The food is wholesome, well prepared and abundant.

Considerable improvement has been made in the Training School which will result in benefit to the Hospital. The management has made a distinct advance in the institution by installing a bedside call system in the infirmary wards, just as you find in general hospitals.

All patients committed to the institution are now given a thorough physical as well as mental examination. The Hospital is equipped with an up-to-date laboratory, an X-Ray outfit, and has a full time dentist. It is the routine practice with all patients to have X-Ray pictures made of their teeth and proper treatment given by the dentist.

Wassermann tests are made on all patients and such other scientific laboratory examinations as are indicated. Typhoid prophylaxis is given at regular intervals to all patients and

vaccination against smallpox is regularly given. The Hospital is also equipped with a splendid operating room and the surgery necessary is done by the consulting surgical staff.

It is a pleasure for us to commend the Superintendent and the medical staff for the excellent work that is being done, but I feel that I should call forcibly to your attention some of the conditions I found and the handicaps under which the management is having to operate.

As already stated, the Hospital is very much over-crowded in quarters for colored people, and these quarters are far from being sanitary and suitable for people to live in, much less to serve as a hospital where they are sick and need treatment. The Board of Regents and the Superintendent have called attention to these facts, but the Legislature has not yet provided additional quarters. Immediate relief should certainly be given to the over-crowded condition, and this can only be done by additional buildings. When buildings are provided we know that they will be properly constructed and provided with modern sanitary equipments.

The death rate for the past eleven months was 7%.

Respectfully submitted,

Robt. A. Marsh, M. D.,
For the Committee.

Edgefield, S. C.

To the Chairman and Members of the Executive Committee, of the South Carolina State Board of Health:

Gentlemen: I beg to report to you that on the 12th day of October, 1922, as a member of your Committee to inspect the Penal and Charitable Institutions of the State, I visited the Penitentiary and made our usual sanitary inspection of the same.

I am glad to report to you that since our last report we were able to note some changes for the better in the institution. Certainly there have been great changes in the woman's ward: the old wood stoves that were used a year ago have been replaced with steam heat, which makes the ward very much more comfortable. The solid wall that formerly shut off all light, air,

and vision from the north side of the building has been torn out, thereby giving room, light and air to the inmates. At the east end of the ward there has been erected a building for dining room, kitchen and laundry. This house was completed but not occupied on account of some of the fixtures, etc., not having arrived. We found 59 women in the institution, 53 blacks and 6 whites. They will not be so crowded after the dining room is moved intu the new building. The structure of this building is such that should a fire start in the wareroom beneath, it would be almost impossible to get to the prisoners and remove them before they were burned.

The main building shows, too, that something has been done along the line of sanitation, principally in the toilet arrangements.

Most of the cells were clean and left in order.

This building is in just about as good condition as it is possible to keep it.

Some improvements were noticed in the dining room also. Now, there is a screen there separating the colors. I saw many flies in here and called the attention of the Captain to this condition, and asked him to see that the screen doors were kept shut, and that they were patched.

The kitchen is the same small, filthy place, with all the plastering overhead gone. There is no hope for this place until it is enlarged. In here the need of pots for boiling food is noticeable.

In the hospital were 10 white and 17 negro men. Two of the latter were insane and tied in bed and the noise from them was disturbing to the other sick. The floors were clean; the bedding not so tidy as it should be.

The new milk room, nicely screened with cement floors, is a credit to the institution.

The death cell is kept clean. 3 white and 2 black men were in here.

At the bathing trough we were struck with the small number of towels—only five for this large family to dry their faces and hands on after bathing.

With the above report as to the conditions as we were able to see them, we wish to offer for the good of the institution

a few recommendations which we believe, if carried out, will be of great benefit:

1. The old unused building should be torn away and the material put into a new woman's ward, in which whites and blacks should be separated.

2. A larger kitchen and two more pots should be provided.

3. More of a variety of food should be provided. I saw the dinner on the day of my visit, and it consisted of a slice of boiled bacon, boiled turnips, corn-bread, syrup and water.

4. The hospital should have a separate kitchen and a cook, a male trained nurse to care for the sick and supervise the preparation of the food for them. A record of each case coming into the hospital, showing diagnosis, treatment, etc., just as in general hospital, should be kept.

5. I think more milk cows should be had, there being only 13 there now.

6. I think that separate toilets should be provided for the women who work.

7. A special guard should be put on for those who are condemned, and the condemned should be taken out of the death house and given some exercise, fresh air and sunlight. Some men have been kept here for three or four years without exercise.

8. I think individual towels at the bathing trough a necessity.

9. A sprinkling system for fire protection should be installed in the store-room beneath the woman's ward.

10. Some quarters should be provided for a haspital for women.

Respectfully submitted,

ROBT. A. MARSH, M. D.,
For the Committee.

Seneca, S. C., Dec. 26, 1922.

Dr. James A. Hayne,

State Board of Health,

Columbia, S. C.

Dear Doctor Hayne: I enclose herewith report on the various penal and charitable institutions visited by me last week.

Yours truly,

E. A. HINES.

SANITARY INSPECTION OF THE CONFEDERATE SOLDIERS' HOME.

I inspected the Old Soldiers' Home at Columbia, S. C., December 22nd, 1922. There are about seventy-five old veterans there at present. The extensive improvements under way at the time of my last visit have been completed. From a sanitary point of view this institution is in every respect a credit to South Carolina and to the South.

The gardens, a herd of cows, a new up-to-date dairy barn add very materially to a proper food supply.

The infirmary is well managed. There were very few cases of illness at the time of my visit.

E. A. HINES, M. D.

SANITARY INSPECTION OF THE REFORMATORY FOR NEGRO BOYS, COLUMBIA, S. C., R. F. D.

The Reformatory for Negro Boys has been reported by the various committees of the Board for many years as being overcrowded and not adequately equipped with fire escapes in the large dormitory.

There have been considerable improvements during the year, however, notwithstanding greatly decreased appropriations.

The entire institution showed the good results of painting here and there, the infirmary, dormitory and dining hall especially.

At the time of my visit the first school assembly was in progress, after an epidemic of 60 cases of influenza.

There are 209 boys at this institution.

E. A. HINES, M. D.

SANITARY INSPECTION OF THE SOUTH CAROLINA INDUSTRIAL SCHOOL FOR GIRLS, COLUMBIA, S. C., R. F. D.

I visited this institution December 22, 1922. There are very nearly three times as many girls as there were in 1921, 60 being the present number there. This great increase has crowded the place to some extent. The institution is a model of cleanliness, and is very efficiently managed.

It is worthy of note that the incidence of venereal diseases upon admission has decreased approximately ten per cent.

E. A. HINES, M. D.

Edgefield, S. C.

To the Chairman and Members of the Executive Committee of the South Carolina State Board of Health:

Gentlemen: It is my pleasure to inform you that I went to Florence on October 19, 1922, and inspected the Industrial School for White Boys on this date.

Mr. Martin, the superintendent, is a most courteous gentleman, and it appeared to me that he took pleasure in taking me into every quarter of the institution, and when he showed me the worst he always explained that the unsanitary conditions could not be helped on account of the lack of funds to have it better, and I am not inclined to blame him at all for the conditions which our lamented friend, Dr. M. J. Walker, so strongly condemned last year. I do not think that the report which you received a year ago can be adequate to express to you the unsanitary condition that exists in part of this institution. It was a very graphic picture that he gave you of the toilets, the bed-wetters, the mattresses, sheets, and the odor in the sleeping quarters, the lack of blankets, etc., but I cannot blame any of this on the management for I believe that Mr. Martin has the interest of the institution close to heart, and I know that he does the very best for the boys that he can.

The trouble with this institution is that there is not sufficient funds appropriated for its support. These boys can't possibly have shoes, clothing, blankets, etc., and go clean and neat

without something to get these necessities with, and the fault for this does not lie with the management, but with the Legislature of South Carolina.

I found all of the sleeping quarters over-crowded, 50 boys sleeping in double deck beds in space sufficient for half that number. The school rooms adjoin these unsanitary quarters.

I found the kitchen and dining room very much more sanitary than the dormitories. The appearance of the boys shows they do not suffer for the want of nutritious food. They are weighed regularly every month and records of their weight kept. I went over these records and saw that a large majority of the boys were gaining monthly.

The hospital is complete and is nicely kept; records of all sickness likewise kept. Every boy is given a thorough physical examination on entrance, including hookworm, Wassermann, vaccination for smallpox, and prophylactic typhoid given.

In the school now they have 180 boys ranging in age from 8 to 20 years. Several of these are now in the high schools of the city of Florence.

Mr. Martin has arranged to have, and does have, movies for the entertainment of the boys two to three times each week.

The dairy is modern and is kept sanitary, 15 cows giving about 45 gallons of milk daily is the supply. This, in my opinion, is not a sufficient quantity for these growing boys.

I visited the farm and found that there is an abundant supply of foodstuffs being raised. Potatoes were being dug, and Mr. Martin assured me that he would house at least 1,000 bushels. The corn crop was good and a large acreage planted. 25 acres to cane for syrup will make an abundant supply. Peas and pea vine hay were greatly in evidence.

Now, if you will please permit me, I would like to offer a few suggestions that I believe will be beneficial to the well-being of the school.

First. Is the great need of a modern school building. If this can be had, then the congested condition in the dormitories would be relieved. The space that is now occupied with school rooms could be taken for sleeping quarters.

Second. A central heating plant should be installed. As it

is now, each building has its own heating apparatus. This is

Third. A more liberal supply of clothing, shoes and bedding for the boys seem to me necessary.

Fourth. Some provision should be made for lockers for the clothing that is not being worn. As it is now, very few have lockers of any kind and the clothing is tossed about in piles.

Mr. Martin is endeavoring to do all that he can for the boys, but he cannot do for them what he would like when he has nothing to do with.

Respectfully submitted,

ROB'T. A. MARSH, M. D.,
For the Committee.

REPORT ON EDUCATIONAL INSTITUTIONS.

Hartsville, S. C., December 20, 1922.

Your committee wishes to report as follows on the examination of the several educational institutions of the State for the State Board of Health.

1. The inspection of the State Agricultural and Mechanical College (colored) at Orangeburg was made by State Epidemiologist, Dr. A. H. Hayden. Conditions there were found to be excellent on the whole and while some minor repairs are suggested in the matter of the pantry and in additionl cleanliness in the girls' dormitory, the place is really in high class condition.

2. The Home for Deaf and Blind at Cedar Springs was inspected by E. L. Filby, the Sanitary Engineer for the State Board of Health, and his report shows conditions there to be satisfactory, though it is recommended that milk be handled in better fashion; that the whole place be screened; that all servants handling food be inspected once a year at least; and that the dairy herd be tuberculin tested. If possible, there should be some sort of inspection for the meat used.

3. Winthrop College was inspected by both Mr. Filby and Dr. Hayden and a thorough survey made of the entire plant. It is incorporated in this report. It is suggested by the engineer that water connection be made with the city system of Rock Hill for any emergency that may occur with the plant's system. The engineer also suggests that better toilet arrangements be supplied for the kitchen help, particularly for the men. The de-

tails suggested are incorporated in his report. He recommends that the manure storage pit be provided with better drainage and be fitted with shutters to darken it and thus keep out flies. It is recommended also that all food handlers be examined at regular intervals and that the meat used be regularly examined. Since new dormitories are needed and must be built at some date soon, it is urgently recommended that they be built of fire-proof material. Recommendations as to the swimming pool are referred to the chemistry department of the college for daily care of the same. It is recommended that for fire protection as well as for use in case of emergency as a water supply that the city system be connected with the college plant; and it is further recommended that a sprinkler system be installed as soon as possible.

Dr. Hayden reports that the authorities at Winthrop College are meeting fully, as they have always endeavored to do, all the requirements of the health laws of this State in the care of their girls and the plant. And that they maintain a high state of efficiency in the care of the sick.

4. Clemson College was inspected and a survey made by Mr. Filby and Dr. Hayden, and the following recommendations were made:

Dr. Hayden suggests the closing of an open fire-place in the operating room of the hospital. The use of the crescent shaped seats for all toilets as a safeguard against venereal infection. The covering of all garbage cans. The screening of all class rooms, barracks, hotel, creamery, indeed, the proper screening of the entire plant. Special attention is called to the very insanitary condition of the class room in which physics is taught. To the poor facilities in the milk room and the insanitary manner in which utensils are handled. Mr. Filby suggests that the open wells about the campus be abandoned or replaced with pump. That all water be treated with liquid chlorine continuously. That drinking fountains be universally installed. That a toilet and dressing room be provided for employees handling food. That additional toilet and shower facilities be provided in the barracks. That the dairy toilet be cleaned and provided with towels. That milkers and food handlers be given periodical examination. That the water entering the swimming pool be sterilized, that sprinkler system be installed, and hand grenades be amply provided for fire protection. That future buildings be fireproof.

WM. EGLESTON, Chairman.

SANITARY INSPECTION OF WINTHROP COLLEGE.

Rock Hill, S. C.

E. L. Filby, State Sanitary Engineer, South Carolina State Board of Health.

Upon direction of Dr. James A. Haynes, Secretary of the State Board of Health, I visited Winthrop College on November 6th, 1922 and accompanied by Dr. D. B. Johnson, President of the college and his assistants, made a sanitary inspection covering the following features: Water supply, sewage, milk, handling of foods, construction of buildings, swimming pool, laundry and fire protection.

Water Supply:

The water supply of the college is derived from wells located about the campus and in a hollow near West White Street and Stewart Ave. From what is known as the lawn pump—is derived the drinking water supplied to the drinking fountains located in the dormitories and other buildings. The well is fully cased and driven into rock with an estimated depth of about 200 feet. This well is pumped continuously and the water circulated thru the drinking fountains—all excess over consumption flowing thru the storm sewer to a collection well used as source of water for fire protection. The campus wells compose a group of 8 inch wells located along the edge of the athletic field at the rear of the gymnasium. These wells are 4 in number and are cased to rock strata, having a depth of 300 feet. They are pumped by air lift to a 7,000 gallon tank at the rear of the laundry where it is picked up by a triplex pump for delivery into the mains and a 75,000 gallon tower. A new well drilled 500 feet on the campus yields only 25 gallons of water per minute. The group of wells located in the hollow near White Street and Stewart Avenue are about 50 to 60 feet deep and cased to rock with a six inch casing. A triplex pump operates on direct suction and lifts the water from these wells to the tower mentioned. These wells are protected from surface wash by a concrete pit extending about 2 feet below the ground level and several feet above it. They are coverd with a tin cover. A ditch dug diagonally across the bottom diverts surface water into the town ditch which runs along one edge of the hollow. This ditch is about 50 to 100 feet from the wells and

carries the drainage of a small hollow extending back into town. These wells are pumped practically continuously. Samples of water are collected from the various sources of supply and sent to the State Board of Health Laboratory and have shown freedom from gas producing organisms. The campus wells are well located and should always show freedom from contamination while the wells in the hollow are not so well located but are protected as fully as possible and frequent testing has shown the freedom from contamination. There is a well at the farm that has occasionally shown up gas producing organisms. This well is a three inch about 150 to 175 feet deep fully cased. It is pumped by a deep well pump to a small tower and distributed by gravity about the farm. It is well located being several hundred feet distant from the dairy barn and up hill from it. A new well 8 inch in size and located still further away from the barns is being drilled. This will be pumped to a new 50,000 gallon steel tower. The old well yields about 30 gallons per minute and it is hoped that the new well will yield far more.

Recommendations:

It is recommended that a connection with the city water supply be installed to augment the present supply as the drilling of deep weels in this locality is largely a gamble unless a limestone cavity is struck. The present supply is adequate provided it is not wasted. Approximately 125 gallons per person per day is available and consumption should be kept below this figure. A connection would relieve the danger of pump break downs and resultant shortage of water. (See also Fire Protection).

Sewerage and Sewage Disposal:

The entire college buildings with the exception of the farm group are connected to the city sewerage system. In the dormitories the toilet facilities vary—in the West dormitory—a new one—8 stools and 8 bath tubs are provided on each floor for approximately 125 pupils. In the North dormitory—an old one—there are 10 stools and 8 baths to the floor. These stools are located at the extreme end of the building whereas in the new dormitories they are centrally located. In the old dormitories the stools and bath tubs are in separate rooms—in the new they are together. Stools in the new dormitories are

of the Vogal type which is most economical of water whereas in the old dormitories they are of the high tank with chain type. In the old dormitories the floors of the toilets are of wood and the rooms are wainscoted with wood. All toilet and bathrooms were spotlessly clean and free from odors. The ventilation of those inspected was excellent. In the servants' toilet (kitchen help) conditions are far from satisfactory. The men are using the women's toilet largely as a rest room and dressing room. Coats, etc. were hung about the room which was dark and not as clean as could be. There were two stools and one hand basin in the toilet which is located opposite the help's dining room and in the one outside near the laundry there are two stools of the Vogel type. No hand basin is present nor are there any shower baths. In the gymnasium are numerous shower baths for the students and they are required to take a shower before entering the swimming pool. Stools are also available. The toilet and dressing room of the gymnasium is excellent as to design, construction and maintenance. At the farm, I was informed that the homes of the employees had running water but it was not ascertained how the sewage was disposed of. One open back privy was observed located near the dairy barn. This should be destroyed as it is apparently not used and is of faulty design. If it is necssary to have a privy near at hand—it is suggested that a pit privy—fly tight be constructed.

Recommendations:

It is recommended that toilet facilities for the kitchen help be provided and the practice of the men using the women's toilet as a dressing room be stopped. For the men, it is suggested that 2 stools, one urinal, 2 showers and a hand basin be provided with liquid soap and paper towels so that the help could wash their hands after using the facilities. As only a small number of women are employed about the kitchen—the present toilet should be adequate if the men are excluded. Composition floors in the dormitory toilets and bath rooms would be an advantage but apparently the wood floors are kept adequately clean at present.

Milk:

Under this heading will be taken up the dairy. The dairy building itself is a modern structure—well ventilated and clean.

The floors and part sides are of concrete and at the time of inspection were clean and sprinkled with lime. The characteristic odor of a dairy barn was missing—which is to be commended. Few flies were in evidence. The milk is obtained from a herd of 70 Holsteins and Jerseys all being free from tuberculosis. Milking is done by machine—finishing by hand. The herd is under direction of a Clemson College graduate. Milk cans and utensils are cleansed by boiling water and live steam. They are drained in a screned room—which is in reality a porch. Sunshine and fresh air complete the process. The milk is not pasteurized but carried in 10 gallon cans over to the kitchen and served to the students as whole rew milk. Whatever is not needed by the dining room is separated and the cream pasteurized and made into butter. The milk and cream room was clean, screened and provided with modern machinery. Concrete floors and side walls enable it to be kept clean. A cold storage room allows excess milk and cream to be kept in the milk room. Manure is removed from the barn in overhead conveyors and emptied into a concrete pit about 150 feet from the barn. The manure is stored in this pit until needed about the farm. It was estimated that the pit was emptied as much as possible about twice a week. There is no drain to the pit except a hole knocked in the wall about 12 inches above the bottom so that a foot of liquid stands in the pit. This liquid was full of mosquito larvae where it was exposed to the air. No attempt is made to screen the top of the pit or to darken it so that flies will not gather there. It is difficult matter to entirely empty the pit as it has no sump from which the liquid could be pumped.

Recommendations:

It is recommended that the manure storage pit be fitted with wooden shutters so as to darken the interior of the shed. Also some arrangement should be provided to drain the pit. If a hole is knocked thru the side wall at a level with the floor—the far side of the floor should be raised slightly to give a slope toward the drain. As much liquid as possible should be kept from the pit.

Handling of Food:

The handling of milk from cows to kitchen has been described above. Winthrop has adjacent to its dairy barn a

concrete and wood shed in which is housed cattle bought from North Carolina for beef. These cattle—largely white faced Herefords—are bought in car load lots and fattened in this barn. As they are needed they are slaughtered. The barn is within fifty feet of the cow barn and the accumulation of manure in the barn is removed only when it becomes imperative by filling up. The killing room is detached from the barn and after a beef is slaughtered the meat is allowed to cool for about an hour in a screened room before it is taken up to the college cold storage rooms located beneath the kitchen. No inspection of the meat is given but the hearts, livers, etc. are not used by the college. The offal is hauled off and buried. The burial spot was not seen by myself. Cattle and hogs are killed once a week. Hogs are kept in a different part of the farm and are fed on the garbage from the kitchen. Eggs are produced on the poultry farm where several hundred white leghorns and barred Plymouth Rocks are kept. All buildings were quite clean, well kept and designed.

At the college kitchen the cooking is done by 8 cooks in a large room, screened and well ventilated. The floor is of concrete which is scrubbed up twice a week. Plenty of soap and hot water are available. The service in the dining room is by white girls but all the cooking and washing of dishes, etc., is by colored help. No physical examination of the food handlers is required but the labor turn over is very low and the lady in charge knows every employee. The bakery is housed in the same building and the refrigerating rooms are below the kitchen. The refrigerating rooms were clean and no odor noticeable except at a food chopper or sausage machine which Dr. Johnson ordered removed from its location. If the machine is to be used only as a sausage grinder, its location is satisfactory but if hot foods are to be ground up in it also—it should removed. The design of the refrigeration plant is excellent. The ice plant is modern and the water "double distilled" and handled in the best possible manner. The bakery is clean and a new electric baker has recently been installed. Dishes are washed in a modern electric driven machine using boiling water, etc. Dishes are carried thru in racks and water of varying temperatures forced over them. Steam closets for drying are available. Appliances about the kitchen are modern and kept in a sanitary

condition. In the small cafeteria located in Johnson Hall, foodstuffs such as candy are exposed to flies. If unwrapped candies are to be sold—some sort of glass covers or containers should be used. A screened door is needed and one of the windows needs fixing. The sink drain overflows in a courtyard and the drain from the refrigerator empties into the courtyard thus keping it wet and attractive to flies.

Recommendation:

It is recommended that all food handlers be examined similar to the physical examination given to food handlers in hotels, etc. Slaughtered meat should be examined before used.

Construction of Buildings:

All buildings on the campus are of brick exterior with wooden interior with the exception of Johnson Hall which is of reinforced concrete construction. Each room in the dormitory (West) has about 1,900 cubic feet of air space with window space of 12 square feet (available). Each room has a door with a movable transom and a closet fitted with a ventilator shaft. There is on the average about 2 girls in each room although a large number of rooms have 3 girls. Each room in this dormitory receives some sunlight during the day. There is one drinking fountain of good design on each floor—or one to about every 125 girls. Electric light is supplied each room. Steam heat is supplied each room from a central heating plant. Toilet facilities are mentioned above. Fire prevention features will be listed below. The buildings were not designed to accommodate more than 2 persons per room and the need of new dormitories is apparent.

Recommendation:

New dormitories are needed to take care of any more pupils and it is suggested that new dormitories be of fire resistant construction.

Swimming Pool:

The swimming pool is located adjacent to the gymnasium in a sort of porch to the main building. It is perhaps the best pool in the State. Modern design and construction coupled with adequate maintenance render it a delight to the eye of a sanitarian. The pool is of regulation racing size and con-

struction—lined thruout with tile and having splash gutters and walk dripping collectors. It holds 50,000 gallons and the water is recirculated thru a pressure filter. A chlorinator is being installed to sterilize the water as it leaves the filter. Each day some 10,000 gallons of hot water are fed into the pool to warm it. The filter operates about at the rate of 25 gpm. About 75 students per hour of pool operation is the load. Each student has to take a shower bath before entering the pool and the suits used are the property of the college and kept clean by them. All suits are washed and sterilized after using and supplied to the students upon application. Each student is at all times under medical observation. The water is treated occasionally with copper sulphate.

Recommendation:

It is recommended that if the chlorinator is installed—as it should be—that the dosage be regulated by use of the ortho-tolidin test for excess chlorine and that about .1 part per million excess be carried in the pool at all times. The chemistry department can easily run this test every day.

Laundry:

The laundry is located adjacent to the heating plant and is modern in design and operation. Four large and one small washers and 2 centrifugal dryers constitute the washing equipment. These are of modern design. One mangle does the ironing of the flat work and the fancy pieces are done by hand. Infirmary wash comes in in a separate batch and is handled thruout by itself. Steam presses are available for pressing. Each student is allowed 24 pieces of personal laundry per week. The drying is accomplished in steam closets when needed. The bathing suits are washed in a separate place. Some of these are dried in the air on account of shrinkage.

Fire Protection:

As mentioned before all buildings with the exception of Johnson Hall are of brick exterior with wood interior. Some of the dormitories have large wooden porches on each floor. These afford access to fire escapes and thru other rooms to stairways. Rooms not opening on these porches have rope escapes from each room. Iron towers detached from the dormitories with circular chutes are provided for ready exit. Fire walls divide

the dormitories and doors that close by hand close the hallways. Each floor has a riser water pipe with hose attached and 3 chemical fire extinguishers. Fire gongs are located on each floor and drills are frequent. For fighting fire the college has its own fire pump—a steam unit for 500 gpm. capacity with suction from a 100,000 gallon concrete basin. This basin receives the overflow from the lawn pump, the drainage from roofs of the college and other waste water. It is covered with an oily scum and in the event of a fire would pollute the drinking and cooking water supply of the college, execpting the lawn pump supply, which is piped about separately. Hydrants are scattered about the campus. City hydrants are near by but not on the campus. Of course with fire the city chemical truck, etc., would be available, but it would be desirable to have the city water supply available also in case of a conflagration. At night the dormitories are parolled by 2 matrons and the outside grounds by a watchman, these persons all punch timeclocks showing their rounds. No students are allowed to have heating devices or cooking units or other electrical equipment in their room so that there should be little danger of fire there. Still constant precaution should nevr be relaxed. Sprinklers would add a great percentage of safety.

Recommendation:

It is recommended that a connection to the city fire system be made so that the quantity of water stored in the city would also be available and to eliminate the chance that the collection of water in the pool near the laundry be spread thruout the mains. If it were financially possible to install sprinklers in the dormitories, I believe it should be done. New construction should be of fire resistant materials.

Taken as a whole the management of the college is to be congratulated upon the sanitary condition of the college. The few points mentioned as recommendations will perhaps add a small degree of safety to the health and happiness of the students.

Respectfully submitted,

E. L. Filby,
State Sanitary Engineer.

SANITARY SURVEY OF CLEMSON COLLEGE.

By E. L. Filby, State Sanitary Engineer, State Board of Health.

Acting upon instructions of Dr. James A. Hayne, Secretary South Carolina State Board of Health, I visited Clemson College on November 9th for the purpose of making a sanitary survey of the college. Dr. Riggs, President of the College, very courteously placed various members of his staff at my disposal to facilitate matters. The following points were taken up—water supply, sewerage and sewage disposal, milk, handling of food, construction of buildings, swimming pool, laundry and fire protection.

Water Supply:

The main water supply of the college (including residences of college staff) is derived from what is known as Honeycutt Creek—a small stream flowing a little to the south of the campus. This stream is diverted about ¾ mile above the filter plant and part of the flow comes by gravity across the college pasture to the filter plant. This pipe line is of T. C. pipe and is controlled by a float valve in the coagulation basin which operates according to the height of water in the basin. The water is normally treated with alum—about .7 grains per gallon being used. In high turbidity—some soda ash is used. The coagulents are admitted thru constant head orifice boxes to the mixing chamber and the water settled. About three hours sedimentation is provided. Two filters, each 9x10, with a rated capacity of about 350 gallons per minute filter the water. Filters are of good design and use regular filter sand and gravel. No loss of head or rate controllers are used. A weir is provided with each filter to measure its discharge. Hypochlorite is used depending upon the analysis. Bacteriological analyses of the water is made about every two weeks. The water leaves the filters and enters a rectangular open clear water well holding about 500,000 gallons. From here it is lifted to a standpipe for distribution by gravity. Duplicate pumping units each of 350 gpm. capacity are provided. The entire plant with the exception of the pumping units is unhoused. Filters are backwashed with standpipe pressure. When the hypochlorite is used a dosage of about .2 parts per million of chlorine is available. About 200,000 gallons per day are used when the college is in session. The watershed of the

stream is small and very sparely inhabited. Some farm land on the shed causes the turbidity to rise rapidly following storms.

At the rear of the barracks there is a spring which provides the drinking water in the barracks and mess hall. This spring is well protected and the water is not treated. It is piped about the barracks and about 50 men drink from a spigot located on the runway from barracks to toilets. There is one spigot just outside the toilets that serves a floor of the dormitories. In some of the college buildings drinking fountains are available. Scattered about the campus and at the dairy barn are several dug wells with buckets and rope. Piped water from the filter plant is available at practically every dug well.

Recommendation:

It is recommended that all the dug wells about the campus be abandoned and filled in or the bucket and rope replaced with a pump. The filter plant should have a chlorinator to treat the water with liquid chlorine and treatment with this agent or hypochlorite should be continuous and all water filtered treated. The use of chlorine as a sterilizing agent would afford excellent lessons to the prospective engineers and add a factor of safety to the present plant. The State Board of Health has been urging for some time that all surface supplies regardless of what degree of purification or quality be treated with some sterilizing agent. Chlorine seems to be the most effective and economical. Continuous application is essential. It is urged that the present drinking water spigots be left in place to fill room pitchers, buckets, etc., but that sanitary drinking fountains be added and instructions given not to drink from the spigots direct. Drinking fountains should be of such type that a slanting jet results when the water is turned on and the orifice is so guarded that the lips of the drinker connot touch it.

Sewerage and Sewage Disposal:

The campus is well supplied with a sanitary sewer system which discharges into a branch of the Seneca River. No treatment is afforded the sewage. Dilution of the stream satisfactorily takes care of the sewage. The stream is not used as a source of drinking water further down stream. No complaints have been recorded regarding the stream. Inspection of the toilet facilities of the barracks revealed that the following accommo-

dations are provided. In No. 3 barracks there were 6 stools, 4 urinals, 3 showers, 1 hand basin and one bucket basin, for about 50 men. The toilet facilities are housed in a separate tower about 25 feet from the center of the dormitory. An entrance is provided from each floor of the dormitory. Vogal type closets are used. The toilet rooms have a concrete floor and 5 windows. A slight odor was noticeable. In No. 2 barracks the toilet inspected had 7 stools, 5 urinals and no showers or hand basins. One bucket basin was present and the customary spigot and sink just outside for drinking water and waste. In the old barracks the toilet had 8 stools, 6 urinals, no hand basin, no showers, one bucket basin. About 100 men used this toilet. In the basement of the toilet tower serving this barracks were 6 stools, 3 urinals, 5 showers, no hand basin and one bucket basin. There are about 350 to 400 men in this barracks. The men quartered on the top floor have to come down to the top floor of the toilet which serves the third floor of the barracks also. This third floor toilet has no showers.

The mess hall and kitchen help (colored) have a small section of the bottom toilet room of the oldest barracks. One stool and a shower are available. In the kitchen a place for washing their hands is provided. At the dairy barn there is a stool, a shower and a hand basin for the men. Paper towels have been abandoned and an individual towel hanging up was quite dirty. The toilet room could have been cleaner. At the gymnasium located in the Y. M. C. A. building the following equipment was noted, three stools, 2 urinals, 2 hand basins, 5 showers and 4 others disconnected.

Recommendations:

It is recommended that a toilet and dressing room be provided for the employees handling food. The toilet tower of the old barracks should be extended up another story to serve the boys on the top floor and additional showers should be provided for the dormitories. The dairy toilet should be cleaned up and towels provided. In all the barracks toilets, it was conspicuous that basins and soap and towels were absent so that if one desired to wash their hands after using the toilet, they would have to wait until they reached their room. It is recommended that at least 3 such hand basins be provided for every toilet room and liquid soap and paper towels be also supplied. If the students

at Clemson can be taught the habit of washing their hands after using a toilet, a great public health force will soon be at work.

Milk:

The milk used at the institution is produced from a herd of about 85 cows under the direction of the Dairy Department. The herd is tuberculosis free and milking done by hand. The dairy barn is modern and clean. Concrete floors and side walls enable it to be flushed with water under campus pressure. The floor is washed daily. No attempt is made to save the liquid manure or the washwater. This material enters a small branch near the dairy and creates no nuisance. The branch later flows past the filtration plant but is not used as a source of water supply. One wing of the dairy barn is used to house cows—the other section is at present unused. Manure is hauled from the barn in overhead conveyors and dumped into a concrete pit covered with a wood building so fitted with shutters that it can be darkened and protected from the wind. The manure pit is about 60 feet from the entrance to the wing of the barn used. It has no drain but the manure is mixed with sufficient bedding to keep it quite dry. It is hauled from the pit to the fields about every three weeks. Milking is done by hand and the milk taken up to the agricultural building in 10 gallon cans. Here it is pasteurized, using the batch method. At the barn is a samll detached milk room fully screened where the milk is weighed and small utensils washed. Cans and utensils washed at the dairy barn are dried in the sun along side of the barn. No provision is made to keep fiies from them after they are washed. Hot water and steam are available.

The larger cans and utensils are washed up in the pasteurizing room. Live steam and water and soap powder are used. The pasteurizing room has a concrete floor and side walls and the wash water drains into the regular sewer system of the college. A refrigerating plant is provided in this room but not in use. The refrigerator is cooled by ice obtained from Seneca, S. C. The excess of milk is made into butter. All windows and openings are screened. No ice cream is made except for student instruction. Occasional bacteriological examination of the raw and final milk are made for student practice. About once every two or three months this is done by another department. No medical examination of the milkers is made. At the kitchen the

milk is kept in regular refrigerator rooms. Pasteurization is done every morning—the night milk being kept in iced cans.

Recommendations:

It is recommended that the milkers be given periodical examination and that family records be kept of their families. Attention should be directed to the toilet room at the barn to see that it is kept in cleaner shape—and soap and towels provided. The well at the barn should be fixed (see water supply).

Handling of Food:

Milk has been referred to above. No cattle are killed for beef purposes on the college grounds. All vegetables, eggs, etc., are purchased from outside sources. The beef used is U. S. government inspected and passed. All employees of the kitchen are given periodical examination for communicable diseases. A basin is provided for them to wash their hands. Toilet facilities are mentioned under sewerage. The kitchen is a model one and the best that the writer has observed. A tile floor enables the kitchen to be scrubbed 3 times a day and the mess hall twice a week. Plenty of fresh air, sunlight and white paint present an attractive interior. The employees wear clean white suits. Modern machinery is in use. Steam tables, elctric diswashing machines, steam dryers, etc., facilitate the handling of food and utensils. The meat cutting room is screened. All entrances to the kitchen are screened with the exception of the mess hall door. A refrigerating unit is employed to provide cold storage. No odor was noticiable in any of the cold storage rooms. The bakeshop is modern and clean. Ice is made but only for packing of fish, etc. No ice water is served—the spring water previously mentioned being served.. Most of the storage rooms are underground but they were free from odors and growths. Garbage is at present kept in the open in uncovered cans and is hauled off three times daily and fed to hogs Ashes are sprinkled over the ground where the cans stand. Tin cans, etc., are hauled to the river and emptied in to be carried away by the stream. In low water however this is not effective as the stream is not large enough.

Recommendations:

It is recommended that a dressing room and adequate toilet facilities be provided for the colored help. The steward is to be congratulated upon having such an excellent kitchen.

Construction of Buildings:

All buildings are of brick exterior with wooden interior—(the buildings referred to are the barracks). Some of the rooms have two and some three students. In No. 3 barracks there are four floors with an exit stairway at each end. The rooms are about 14x15 feet and have two windows. No screens are provided. A radiator provides steam heat and electric light is furnished. Wooden floors exist thruout. In No. 2 barracks the rooms are about 12x15 with one window with no screens. Two students are in a room. In the oldest barracks the rooms are about 16x14 with two windows. Two and some times three students are in each room. All the inside rooms of this barracks are screened and some of the transoms over the doors are fitted with netting. Trash cans—two to each floor are usually to be found—one at each stairway. The exits to the toilets are in the center of the barracks. The oldest and largest barracks is shaped like an E. All buildings are equipped with elctric light and steam heat supplied from a central heating and power station. Hydroelectric power is not available. The infirmary is constructed of wood thruout and is a small frame dwelling of two stories with an attached kitchen. It is fully screened and has its own little heating unit.

Recommendations:

If a new infirmary is built, it should be of fire resistant materials. Connection of the infirmary to the regular heating system should be made if sufficient pressure on the steam lines is available. Glassing in of the runway between the infirmary proper and the kitchen would be advantageous. As new barracks are constructed, it is suggested that they be of fire resistant materials. Three students in one room seen a trifle crowded for individual work.

Swimming Pool:

In the Y. M. C. A. building, which is a modern commodious building, is a pool used largely by the students as few town folk are permitted to use it. The pool is not patronized very

much—the complaint being that it is not warm enough. At the time of inspection no one was using it. The pool is of modern design with scum gutter and walk drain. The cork strip along the edge of the pool to prevent slipping had become so warped that it has been removed. The pool is a regulation racing pool and holds some 70,000 gallons of water which is recirculated thru a N. Y. Continental Jewel pressure filter. The pool is originally filled with filtered (standpipe) water. It is warmed by condensation from the heating system. Persons using the pool are required to take a shower bath before entering the pool but no one is present to see that this is done. The water in the pool is entirely changed as often as the local board of health suggest. No suits are worn by the swimmers in the pool. Swimming is not compulsory for the students. The pool is well ventilated but dampness penetrating the walls on one side has caused the paint to scale off quite badly. No record of the use of the pool is kept.

Recommendation:

It is recommended that some sterilizing treatment be given the water before it enters the pool after being filtered. With water of such turbidity—the use of ultraviolet ray is suggested. Chlorine could also be used but care must be taken not to overdose the water. A placard with some requests as to the use of the pool might help keep it clean. Swimming should be compulsory.

Fire Protection:

The only fire protection that is available is the water stored in the standpipe and the clear water basin. This water is available thru 6 and 8 inch lines with hydrants scattered about the campus. In the dormitories—there is a riser pipe with a valve and section of hose to each floor. Some of the valves and hose are boxed in, making access to them quite difficult. Exits from the dormitories or barracks are down the wooden steps at each end. The number 3 baracks has an iron ladder fitted to the wall adjacent to the entrance to the toilet. In some barracks there is a stairway at the center, near the toilet building. No means of fire alarm was noticed. No regular fire fighting force is available. No sprinklers are in the barracks. Since the easy control of the kitchen fire a few years ago the chances of a conflagration are

not considered possible. The institution when in session (regularly) is largely under R. O. T. C. control. Military training is an aid in preventing any large loss of life.

Recommendation:

It is recommended that all barracks be protected with sprinklers in view of the construction of the buildings. New construction should be of fire resistant materials. Chemical extinguishers should be handy in the barracks halls. An alarm system connected to the power plant would be advantageous.

Laundry:

The laundry is modern and newly housed. With the completion of the wiring system it will be in excellent condition.

The institution, as a whole, from a sanitary standpoint is in fine condition and with remedying of the few points mentioned, the safety, health and happiness of the students should be assured.

Respectfully submitted,

E. L. Filby,
State Sanitary Engineer.

Columbia, S. C., November 24, 1922.

Dr. James A. Hayne,

State Health Officer,

Columbia, S. C.

Dear Sir: In accord with the resolution passed by the Executive Committee of the State Board of Health at its last meeting, I visited and made a thorough inspection of all parts and departments of Winthrop College, including commissary, pantry, kitchens, dining room, refrigerators and refrigerating plant, poultry yards, stables, dairy sheds, milk room, creamery, gymnasium, swimming pool, hospital, and buildings and grounds generally, finding everything in, around and connected with the institution showing a very high state of efficiency in every matter pertaining to sanitation and hygiene. Health conditions at Winthrop may be recorded as excellent when the following record is noted.

On the day of my visit there were twenty-six young ladies in the hospital, the doctor in charge, Dr. M. Whitesides, advising

that this number included three cases of dysmenorrhea of a mild type, four cases of pharyngitis, one tonsilitis and pharyngitis, one multiple neuritis, one case infected axillary gland, and sixteen cases of simple "colds." During the present school year to date the cases treated in the hospital will average a fraction less than one per cent of the students in attendance at the college (viz: 1,364), or an average of thirteen per day, the cases of sickness, with rare exception, having been of the very simplest character such as "colds," mild cases of tonsilitis, pharyngitis, etc., tonsilitis and simple pharyngitis constituting considerably over 50% of all cases. Dr. Whitesides, the college physician, advises me that where tonsillectomy is advised that students readily accept operation and are referred to outside hospitals where the work is done, no operations being performed in the hospital connected with the college. During the present college year to this date there has occurred among the students no case of a contagious disease, and only one case each of erysipelas, one of appendicitis and one case of fracture. No cases of typhoid fever, diptheria or dengue have occurred among the members of the student body.

As far as I could see the authorities of Winthrop College were meeting fully the requirements of all health laws of the State and all rules and regulations of the State Board of Health, and through diligent care and markedly intelligent efforts along the lines of sanitation and hygiene, were maintaining a very high degree of health and well-being among the students.

At the request of Dr. Johnson, President of the College, I delivered an address to the students of the college on general health subjects.

This report, which I trust meets in every particular the information through inspection which was desired by the Executive Committee, is respectfully submitted.

A. H. Hayden, M. D.,
Epidemiologist, State Board of Health.

DR. HAYDEN'S REPORT ON CLEMSON COLLEGE.

Columbia, S. C., November 24, 1922.

Dr. James A. Hayne, State Health Officer, Columbia, S. C.

Dear Sir: In accord with the requirements of the Executive Committee of the State Board of Health embodied in a resolution adopted at their last meeting and, through you, communicated to me, I visited and made a thorough inspection of all departments of Clemson College, November 22, 1922. A full report of my finding on the occasion of this inspection follows:

The officers of the College offered every facility possible during the inspection of the College, and the College physician, Dr. G. D. Heath, gave his entire time during the day to the work in hand.

The health of the student body during the present college year to date, has been remarkable, the records of the hospital showing an average of less than one-half of one per cent of the students applying for medical or surgical aid. Upon the occasion of this inspection, there was only one student in the hospital and he suffering only a slight cold. There has been not a case of contagious disease among the students and venereal diseases have been conspicuous by their absence. Hospital records at the College show a large percentage of hospital cases to be suffering from minor injuries received on the gridiron, the balance of cases consisting almost entirely of slight to moderately severe "colds," cases of pharyngitis and cases of tonsilitis.

The Hospital, though small, is ample for the purposes of the College, and is kept in excellent condition. There is, however, an open fire-place in the operating room which should be at once closed, as it is, for obvious reasons, a menance. It is needless, as the room is steam-heated.

Toilets connected with the barracks are kept in a cleanly condition, but are unscreened. It is suggested that as a precautionary measure against the possible contracting of venereal diseases, the old and antiquated toilet seats now in use ("saddle and oval") be abandoned and the "crescent" type of toilet seat adopted as a standard for the toilets.

Garbage cans standing nearby the kitchen are without covers and form a very effective attraction for flies. This condition, I

understand, will be corrected in the near future by the building of a concrete, screened housing construction for their cans.

Barracks, which in the institute stand as boarding houses for the students, are generally in a cleanly condition except the halls which in places show a lack of care, and are in places occupied with an accumulation of filth well ground into the floors. These barracks are not screened as they should be, occupying as they do, the places of hotels or boarding houses for the students. The floors of the barracks which I am informed, are supposed to be kept oiled, are not oiled sufficiently or often enough to make this method of prevention of dust raising of any value whatever.

Class rooms are unscreened, which is in violation of the rule of the State Board of Health requiring thorough screening of all school houses. I would call especial attention to the very filthy condition generally of the class room in which physics is taught. In this room and the laboratories connected with it, everything is in an unkept and filthy condition, even the window sills, sashes, etc., supporting an accumulation of dust and cobwebs, which are evidently the product of months of restful inattention. A large spittoon filled to capacity with cigar stumps and smokers' debris generally, is quite representative of the general condition of this lecture room and its accessory floor space.

Y. M. C. A. Building on the whole was in excellent condition, and indicated care in its keeping. The gymnasium, swimming pool, living rooms, bed-rooms and cafeteria all presented a clean and attractive appearance and were well-kept, the windows to all bed-rooms being properly screened.

Dairy barns were in excellent condition.

Milk room and utensils in connection with the dairy barn, were kept in anything but a sanitary condition at the time of my inspection. The milk room was entirely too small for the requirements of a dairy of the size maintained by the College. In passing through this room into lot adjoining, attention was forced to annoying swarm of house flies attracted to the spot by an accumulation of sour cloths strown about the ground. Inquiry proved that they were the discarded milk-sodden cloths that had been used for straining milk and which had been thrown upon the ground immediately without the door of the milk room.

Immediately above this accumulation of milk-sodden cloths were shelves in the open on which rested all of the milk buckets used in milking the herd of dairy cows, and these were swarming inside and out with flies. Questions asked of the dairy-men elicited the information that these shelves had been built about a week previous, because of lack of space in the milk room, for the purpose of storing and sunning the milk buckets, and that after use, and subsequent sterilization, they were placed on these shelves for the entire day, when they were again called into use without being re-sterilized or even rinsed out. I was informed that in about a week's time it was hoped to have these shelves screened.

Barber shop connected with the institution was in a fairly satisfactory condition, but the proprietor's attention had to be called to his illegal use of lump alum, healing powder, etc., on the faces of his patrons.

Mess Hall in excellent condition of cleanliness and great care in this respect was evident.

Kitchen, pantry, commissary and laundry, all looked spick and span, and were in every way attractive and indicated close attention and interest taken in the health and comfort of the students.

Hotel connected with the College was in every way attractive in appearance, and was cleanly kept in all departments. While screened, the screens at both doors and windows were not effective as they were badly in need of repairs.

Creamery lacked proper screening, and the screens at windows and doors were in need of repair and availed little in the way of protection against the ingress of flies as evidenced by their presence and also that of "tangle foot" fly paper placed in the creamery for their undoing.

Respectfully submitted,

A. H. Hayden, M. D.,
Epidemiologist, State Board of Health.

DIVISION OF MALARIA CONTROL
SOUTH CAROLINA STATE BOARD OF HEALTH.

1922.

During the year, the work done by this division consisted principally in malaria mosquito control work, maintained at towns where work was started in previous years, and new work instituted at five additional places as shown in the table below.

Town	County	Year work was started	Approx. Reduction in Mal. Prev.
Bamberg	Bamberg	1919	90%
Chester	Chester	1920	99%
Hartsville	Darlington	1920	50%
Fairfax	Allendale	1921	90%
Beaufort	Beaufort	1921	60%
Holly Hill	Orangeburg	1921	85%
St. George	Dorchester	1921	85%
Hampton	Hampton	1921	90%
Ehrhardt	Bamberg	1922	90%
Greer	Spartanburg & Greenville	1922	90%
Harleyville	Dorchester	1922	*
Mt. Holly	Berkeley	1922	*
Russellville	Berkeley	1922	*

Work at Mt. Holly and Russellville paid for by private enterprise, but periodic supervision was furnished during the season by this Division.

The value and importance of mosquito control work in preventing malaria is being appreciated to an increasing extent throughout the State, as is evidenced by the amount of work the towns are undertaking on their own initative and without any supervision or assistance from the Division of Malaria Control. The work at some of these places is imperfectly done and the maximum result for the money expended is not obtained; however, some of it is done properly, and undoubtedly a great

deal of good is accomplished. Some of the towns obtain their inspiration from the work done in their vicinity by the Federal Government during the War. Others are encouraged to undertake the work by the results achieved at some of the towns where work was done under our supervision.

The following table shows such towns and the approximate sums spent for malaria control work. The information was obtained by a circular letter addressed to the towns in the State:

Town	Amount Spent
Aiken	$ 1,000.00
Rock Hill	901.20
Columbia	3,000.00
Chester	3,280.00
Darlington	300.00
Marion	2,678.81
Mt. Holly	1,200.00
Russellville	1,500.00
Spartanburg	1,219.24
Greenville	832.09
Total	$15,911.34

The general procedure in doing malaria control work at a town is as follows:

Upon request of some of the town officials or some of the citizens of the town, a preliminary survey is made to ascertain, roughly, the amount of malaria present among the population. The principal malaria mosquito breeding places affecting the town are examined and a very rough approximation made as to the cost for eliminating the breeding area.

The town officials, members of the board of health, and leading citizens are interviewed to accertain whether any interest exists in the town for eliminating malaria. If sufficient interest exists and if the officials think that the town can contribute to its share of the proposed budget, a more careful survey and estimate of the cost are prepared. The State and International Health Board in the past have jointly paid for half of the cost of the work; the town paying the other half and agreeing to maintain the work after its completion.

During the year preliminary surveys were made at the following places:

Town	County
St. Stephens	Berkeley
McColl	Marlboro
Barnwell	Barnwell
Eutawville	Orangeburg
Batesburg	Lexington
Harleyville	Dorchester
Bennettsville	Marlboro
Walterboro	Colleton
Belton	Anderson
Woodruff	Spartanburg
Rock Hill	York
Greer	Greenville
Russellville	Berkeley
Mt. Holly	Berkeley
Edgefield	Edgefield
Blackville	Barnwell
Georgetown	Georgetown
Johns Island	Charleston

In order to meet the cost of maintaining permanent work some of the towns have induced their county delegations to have Legislature enact special legislation incorporating the area under control into a health and drainage district, granting authority to the local board of health to levy a tax on the district sufficient to provide maintenance funds which are to be spent under the supervision of the State Board of Health. This method of financing the maintenance work is, we believe, the most equitable that could be evolved. Such health and drainage districts have been established at the following towns:— Bamberg, Erhardt, Fairfax and Holly Hill.

The work at Greer has developed into the carrying on of general health work in the town of Greer, and in the cotton mill villages surrounding the town. The mills support the work financially, and seem well please with the results so far accomplished. The work is being carried on by J. Harvey Venning, formerly of Charleston, who worked with this division at Bamberg in 1920. Besides mosquito control work, general sanita-

tion is done; fly proof privies are constructed, sewer connections are made where it is possible to connect to a sewer, water supplies are investigated and protected from contamination, school children are examined for defects and arrangements made to correct the defects, milk supply for the area is supervised, all cattle are required to be tuberculin tested, the slaughter of cattle is supervised, lectures are given, films shown, pamphlets and newspaper articles distributed, etc.

It has been gratifying to note that there has been practically no dengue or "broken bone" fever in the towns where malaria control work has been carried on. This is due no doubt to the reduction of the pestiferous mosquitoes that is brought about in the reduction of malaria mosquitoes. It is not known that any cases of dengue have occured at Fairfax, Hampton and Erhardt. Six or eight are reported to have occured at Bamberg where the control of house bred mosquitoes has always been difficult. No cases occured at Holly Hill, and only two or three at St. George. When these figures are compared with towns similarly situated in the State, one cannot help but come to the conclusion that the money spent on mosquito control work was a profitable investment. While the species of mosquito that conveys dengue has not been definitely incriminated, it appears reasonably certain that the yellow feaver mosquito—Aedes Egyptus Colopus—or Culex Quinquefasciatus, or Culex Pipians are the vectors by which the disease is spread. It appears possible that all three species may spread the disease. These species are primarily house mosquitoes breeding in artificial containers in water in or near the house.

During the year, a conference was had with the Public Relations Committee of the Seaboard Air Line Railroad Company at Savannah, in an effort to induce the Railroad to undertake malaria control work in the territory in which it passes in the State. As a result of this meeting, Mr. A. W. Fuchs, Associate Sanitary Engineer, United States Public Service, was detailed to make a survey. This survey was made the means of interesting the counties of Georgetown, Charleston and Beaufort, in county wide malaria control work, and practical assurances have been received that Georgetown and Charleston Counties at least will financially support a program for county-wide malaria control work in 1923.

Malaria exhibits were prepared and shown at the State Fair at Columbia and at county fairs held at the following places: Florence, Spartanburg, Marion, Orangeburg, Bennettsville and Chester.

An exhibit was also shown at the meeting of the Southern Medical Association at Chattanooga, Tennessee, where it received honorable mention. Pamphlets and literature were distributed at these fairs as well.

The movie film belonging to this division was used during the year, largely by the Bureau of Rural Sanitation, and was shown in many rural communities, particularly in malarious sections of the State.

Besides the intensive malaria control work that was done at towns in the State, special investigations were made. One in the northern section of Darlington County, where an outbreak of malaria was traced to several ponds, the outlet to which had become obstructed in recent years; one in the Abney section of Kershaw County, where the stream channel of Little Lynch River became obstructed with logs and debris, causing breeding areas; one in the Liberty Hill section of Kershaw, where the impounding of the Wateree River was reported to have caused a sharp increase in malaria along Beaver Creek; one at Alcolu in Clarendon County, and one in Colleton County in the Salkehatchie Swamp.

For the past three years, an effort has been made to asceratin the prevalence of malaria throughout the State. A franked post card was sent to each physician in the State with a request that he return a card stating thereon, how many cases of malaria he had treated during the year. The figures for the past three years are shown below:

County.	Cases.	Cards to Dr.	Replies recieved.	Cases.	Cards to Dr.	Replies recieved.	Cases.	Replies recieved.
	1922	1922	1922	1921	1921	1921	1920	1920
Abbeville	165	18	7	36	.....	7	5	2
Aiken	380	31	17	25	.....	4	20	2
Allendale	1 353	11	6	400	.....	1	.....	.....
Anderson	122	47	30	88	.....	28	1	7
Bamberg	889	12	8	24	.....	4	1 350	4
Barnwell	654	12	4	267	.....	6	208	1
Beaufort	274	11	7	18	.....	4	338	5
Berkeley	1 500	4	1	.....	.....	.....	.....	.....
Calhoun	900	11	7	.....	.....	.....	1 000	1
Charleston	2 374	80	42	1 726	.....	34	92	8
Cherokee	126	14	9	78	.....	6	50	2
Chester	353	26	17	54	.....	9	200	2
Chesterfield	32	13	5	8	.....	4	8	2
Clarendon	270	16	5	25	.....	3	408	4
Colleton	610	19	5	300	.....	6	300	1
Darlington	625	32	17	206	.....	12	99	6
Dillon	140	17	6	9	.....	6	32	3
Dorchester	692	19	2	291	.....	8	400	4
Edgefield	105	12	7	175	.....	8	16	6
Fairfield	877	14	9	70	.....	3	50	1
Florence	1 139	42	22	44	.....	7	1 935	6
Georgetown	1 663	13	9	1 250	.....	7	525	6
Greenville	101	92	50	55	.....	49	14	12
Greenwood	92	24	19	76	.....	18	110	7
Hampton	1 195	20	7	426	.....	7	1 300	2
Horry	835	12	6	200	.....	4	130	5
Jasper	175	3	1	.....	.....	1	.....	.....
Kershaw	365	22	8	50	.....	9	285	5
Lancaster	195	15	8	.....	.....	.....	58	3
Laurens	165	26	19	49	.....	21	44	12
Lee	185	22	6	100	.....	3	31	2
Lexington	744	23	8	174	.....	11	759	9
McCormick	52	7	2	10	.....	2	.....	1
Marion	1 027	14	8	350	.....	6	375	5
Marlboro	449	17	10	372	.....	8	25	1
Newberry	705	33	15	258	.....	9	225	4
Oconee	5	19	14	1	.....	14	.....	7
Orangeburg	7 319	44	17	870	.....	11	765	8
Pickens	5	23	11	7	.....	13	31	2
Richland	786	45	19	642	.....	9	66	11
Saluda	275	11	5	20	.....	1	.....	2
Spartanburg	106	86	48	80	.....	18	185	17
Sumter	408	27	11	49	.....	7	132	4
Union	93	19	11	37	.....	2	47	3
Williamsburg	1 570	14	9	.....	.....	.....	595	4
York	133	24	15	23	.....	4	45	5
Totals	32 228	1 116	569	8 953	930	394	12 259	204

These figures are not complete, nor are they entirely correct, but since they were collected in the same way in 1921 and 1922, the figures should be comparable, and indicate that 1922 was probably a more malarious year than 1921, since there were approximately three hundred percent more cases reported and only forty percent more docters reporting in 1922 than in 1921.

During the year the office was moved from 1246 Main Street to 206 Palmetto Building, where it is in closer touch with the State Health Officer.

The personnel during the year was the same as during the previous year, which was as follows:

Officer in Charge, L. M. Fisher.

Malaria Field Agent, Robt. S. Baynard.

Sanitary Inspector, William Weston.

Sanitary Inspector, Lindsley Arthur.

Stenographer, Mary Dorn.

Respcetfully submitted,

L. M. Fisher,
Associate Sanitary Engineer,

United States Public Health Service, In Charge Malaria Control Work in South Carolina.

REPORT OF WORK DONE BY DR. A. H. HAYDEN, EPIDEMIOLOGIST, STATE BOARD OF HEALTH, FROM JANUARY 1, TO DECEMBER 31, 1922, INCLUSIVE.

Columbia, S. C., December , 1922.

To the State Health Officer and the Chairman and Members of the Executive Committee of the State Board of Health:

Gentlemen: Following is a full report of the various places visited by me and the work done in the same during the year 1922. Besides this work required in my own department, I have at various times been able to assist in a small measure in the work of other departments, such for instance, as aiding in the work of free tubercular clinics on one or two occasions, de-

livering quite a number of addresses on general health subjects in schools and colleges, community gatherings, etc., besides attending to matters of various kinds in the office, including certain correspondence, etc., etc.

January 5.—Visited Anderson, S. C., to inspect 9 cases of smallpox reported not quarantined, and houses not placarded. Doctors seen and advised relative to laws governing quarantine and mill authorities of H. C. Townsend mill seen and advised as to the necessary procedure to stamp out disease.

January 6-7.—Visited Scranton, S. C., where there were 12 cases of typhoid fever in 6 families. Addressed large meeting of citizens and town authorities on health matters. Organized a local board of health, and showed them how to function and take necessary steps to stamp out the disease.

January 10.—Visited Langley, S. C. Saw 3 cases of smallpox with local authorities and directed necessary steps to be taken to control diseases and prevent epidemics.

January 11.—Visited Langley, S. C., to see smallpox. Saw 12 cases with local physicians and directed steps to be taken to control epidemics. Advised the mill authorities controlling the mill properties at Langley, Bath and Clear Water to apply to the State Health Officer for the appointment of a board of health to control health matters in those towns and outlined the necessary steps to be taken to have the same appointed.

January 12-21.—Aynor, S. C., Visited this village by request and delivered health talks at two schools, at a large meeting of citizens at the Baptist Church, and to a joint meeting of town council, the local board and members of the Civic League, advising the latter how to proceed to safeguard the health of the town.

January 22.—Visited case of scarlet fever in school district No. 18, several miles outside of Columbia, with the view of preventing spread of the disease.

February 1.—Visited Calhoun Falls, S. C., to advise with town council on the proper organization of a local board of health. Visited patients in outbreak of smallpox and advised general vaccination of all persons within the corporate limits of the town.

February 12-13.—Hampton, S. C. Followup visit after organizing local board of health and examination of school children for tonsilar and adenoid clinic.

February 13-16.—Allendale, S. C. Examined 277 children in white school, preparatory to putting on tonsilar and adenoid clinic.

February 25-26.—Walhalla, S. C. Investigated outbreak of smallpox. Addressed meeting of town council, local board of health and school trustees, and advised them on health matters and the proper organization of local boards of health.

March 17.—Columbia, S. C. Addressed section of State Teachers' Association of South Carolina on health subjects.

March 19.—Beaufort S. C. Investigating smallpox outbreak in the vicinity.

March 20.—Port Royal, S. C. Consulted with authorities of town and instructed them on proper organization of a local board of health.

March 20.—Coosaw, S. C. Investigated outbreak of smallpox and vaccinated contacts.

March 21.—Beaufort, S. C. Addressed a meeting of school children, teachers and mothers at school house.

March 21-22.—Wiggins, S. C. Made sanitary inspection of the town at request of Lumber Company and advised authorities on matters pertaining to drainage and fly-proof privies.

March 23-24.—Fort Mill, S. C. Investigated outbreak of smallpox and advised with authorities relative to handling situation.

March 25.—Iva, S. C. Diagnosing cases of smallpox and organizing a local board of health.

March 26-27.—Clemson College, S. C. Diagnosed case of smallpox and advised with College authorities.

March 29-30.—Visited Whitmire, S. C., in answer to complaint. Inspected and ordered closed slaughter pens of C. G. Gillians & Bro., in Enoree River. Inspected butcher and barber shops and advised with authorities on general health matters.

April 1.—Visited Pacific Mill Village, Columbia, to investigate and determine cause of occurrence of a case of typhoid fever.

April 2-3.—Visited Bennettsville, S. C. Delivered an address at the request of ministers to men and Sunday School boys on sex matters and venereal diseases.

April 9-10.—York, S. C. Investigated outbreak of smallpox and failure of school authorities to comply with compulsory vaccination laws. Advised with town council, members of local board of health and school authorities.

April 11-12.—Visited Calhoun, S. C., to investigate and diagnose cases of smallpox and chickenpox.

April 12.—Newry, S. C. Investigating and diagnosing cases of smallpox.

April 13-14.—Kingstree, S. C. General sanitary inspection of town and determining the cause of epidemic of typhoid fever. Addressed public meeting, and also town authorities on general health subjects.

April 17.—Rock Hill, S. C. Attending meeting of Public Health Association of South Carolina.

April 18-20.—Rock Hill, S. C. Attending meeting of State Medical Association of South Carolina.

April 23-24.—Easley, S. C. Investigating outbreak of smallpox. Addressed meeting of City Council, members of local Board of Health, school and mill authorities on conditions in Easley and vicinity, and told of remedial measures necessary to be taken.

April 26.—Visited New Brookland, S. C., and investigated complaint relative to hog pens on property immediately adjoining city.

April 27-28.—Visited Varnville, S. C., to investigate complaint relative to manner of quarantine by authorities of town.

May 1-2.—Clinton, S. C. Made sanitary inspection of Thornwell Orphanage and examination of a number of children of the institute.

May 2-3.—Clinton, S. C. Made medical examination of 104 children in Providence School, preparatory to putting on an adenoid and tonsilar clinic.

May 4.—Winnsboro, S. C. To investigate a case reported to be leprosy, to which the attention of the State Board of Health was called by Mr. John J. McMahan, but which on inspection proved to be a case of Raynaud's disease.

May 9.—New Brookland, S. C., to see a case of reported cerebro-spinal meningitis and make intra-spinal puncture and treatment. Case, however, provided to be a case of infantile paralysis.

May 13.—Visited Lees, S. C., to inspect the dairy of W. D. Mayfield on complaint by citizens of Lees of unsanitary conditions in which the dairy was conducted and milk handled.

May 17.—Visited Roysters, S. C., and inspected Carolina abattoir, taking samples of water for examination.

May 23.—Columbia, S. C. Inspection of city abattoir in response to a complaint made by a near resident to abattoir.

May 28-30.—Visited Easley, S. C., to investigate outbreak of smallpox and put on quarantine. Inspected markets and slaughter pens and advised with local authorities.

May 30-31.—Visited Conway, S. C., to look into certain water supply in connection with the occurrence of several cases of typhoid fever three miles in country.

June 5.—Visited Lees, S. C., to make second inspection of Mayfield Dairy and advise with owner on subject of improvements.

June 13.—Lexington, S. C. To visit Red Bank Mill Village and determine focus of infection responsible for outbreak of typhoid fever, and advise as to necessary steps to be taken to stamp it out.

June 15-16.—Blackville, S. C. To inspect Guess Dairy 2½ miles in country, and confer with Board of Health of Blackville who had prohibited sale of milk from this dairy in the town of Blackville.

June 22.—Rescue Orphanage. To determine cause of a case of typhoid fever occurring there.

June 24-25.—Visited Madison, S. C., and vicinity, looking into a number of cases of smallpox, and taking steps to enforce quarantine.

June 26.—Visited Plum Branch, S. C., to inspect meat market and butcher shops at request of members of the local board of health.

June 27.—Langley, S. C. Investigating nuisance on complaint of a number of citizens of the town of "Burneytown."

July 2-4.—Visited Charleston, S. C., attending meeting of the County Health Officers of the State.

July 6-7.—Visited Oconee County, near Georgia line, in company with Sheriff and Deputy of Oconee County; quarantined and enforced observance of quarantine laws on part of occupants of 8 homes in rural districts.

July 8.—Landrum, S. C. Inspection of town at request of local board of health to determine cause of outbreak of typhoid fever.

July 11-12.—Landrum, S. C. To deliver address by request at called meeting of citizens, on health matters and needs of town to improve sanitary conditions.

Julg 19.—Visited Pacific Mills, Richland County, to advise as to need of immediate action in establishing a rural board of health in order to act in conjunction with City Board of Health in control of situation in adjoining property, causing cases of typhoid fever.

July 19-20.—Greenwood, S. C. To confer with city health officers, county nurse and authorities of Penola Mills, relative to need of action to control and prevent the spread of typhoid fever prevelent to those places.

July 21-22.—Visited Hartsville, S. C., to investigate and determine source of infection in connection with an outbreak of typhoid fever in widely separated parts of the town of Hartsville, the Douglass settlement and in the chainging working in vicinity of these places.

July 24-25.—St. Stephens, S. C., to determine cause of cases of typhoid fever occurring in the town and to confer with town authorities and organize a local board of health.

July 26-27.—Visited Due West, S. C., to deliver, by request, an address at the county demonstration meeting at Erskin College.

July 29.—Visited authorities in Columbia, S. C., of the Southern, Atlantic Coast Line and Seaboard Air Line Railroad and called their attention to violation on their trains of health laws prohibiting dry sweeping and dusting of coaches in transit, and advised that this disobedience to the law must at once cease.

July 31.—Walhalla, S. C. To inspect slaughter pen on complaint of conditions by citizens.

August 1.—Walhalla, S. C. Inspecting meat markets and slaughter pens. Closing the latter on account of unsanitary conditions and violation of health laws governing the same.

August 2-3.—Rock Hill, S. C. Investigating outbreak of typhoid fever in Aragon and Blue Buckle Mill Villages, vaccinating 200 persons at Aragon, and 250 persons at Blue Buckle Mills against typhoid fever.

August 4-5.—Visited Dunbar, S. C., to investigate outbreak of typhoid fever. Vaccinated 63 persons with anti-typhoid serum.

August 9-10.—Visited Rock Hill, S. C., to give second inoculation against typhoid fever to 200 persons at Aragon Mills, and 250 persons at Blue Buckle Mills.

August 31.—Liberty, S. C. To make sanitary inspection of town, advise with local authorities, and organize a local board of health.

September 1.—Liberty, S. C. To make sanitary inspection of town, advise with local authorities, and organize a local board of health.

September 4.—Advised at length with Attorney-General, Columbia, S. C., and obtained his opinion for publication on compulsory vaccination laws governing schools in correction of error or omission concerning same published in book of school laws issued for office of State Superintendent of Education.

September 4-5.—Visited Clio, S. C., to investigate complaint of citizens on account of city dump heap, and advise with local authorities concerning same. Also to advise concerning proper organization of local board of health.

September 6-7.—Visited York, S. C., to inspect schools admitting unvaccinated children in violation of compulsory vaccination law of State, on complaint of citizen, and to compel obedience to the law.

September 19-20.—Visited Lake City, S. C., to advise with local board of health on condition of railroad ditches running through the town and to point the way to organize a legally constituted local board of health.

September 22.—Visited Orangeburg, S. C., to locate person suspected of being a typhoid fever carrier and determine whether or not she was a carrier.

NOTE: Laboratory examination proved her to be a carrier, and all health authorities interested were advised to that effect.

September 25-26.—Andrews, S. C. To advise with school authorities relative to a thorough physical examination of the white school children, 500 in number, and to organize a local board of health.

September 26-27.—Visited Conway, S. C., to conduct with Dr. Bonner, of State Park Tubercular Hospital, a free tuberculosis clinic, at which 89 persons were given thorough physical examinations and tubercular subjects detected and advised.

September 28.—Visited Loris, S. C., to conduct with Dr. Bonner, of State Park Tubercular Hospital, a free tuberculosis clinic, at which 55 persons were given thorough physical examinations and tubercular subjects detected and advised.

September 29-30.—Visited Easley, S. C., to advise with local authorities relative to a dispute concerning permission to run an abattoir for which permission was refused by the local board of health.

October 5.—Clinton, S. C. To see, with attending physicians, a case of scarlet fever, and to inquire into quarantine of same.

October 6.—Visited Heathwood School, Richland County, to look into reported existence of case of whooping-cough in the schools.

October 12.—Columbia, S. C. Visited all departments of the State Board of Health with Hon. H. H. Gross, Chariman of the Finance Committee of the Senate.

October 19.—Brookland, S. C. To address Banyon Club of the Y. W. C. A., on general health topics.

October 20.—Visited Rose Hill, S. C., to address Woman's Improvement League at Rose Hill school house, on general health matters.

October 22-23.—Mullins, S. C. Investigating complaint of Marion County Grand Jury against Mullins maintaining a nuisance in disposal of the city garbage and adjusting the same with town authorities.

October 24.—Visited Pinewood, S. C., to investigate complaint of general unsanitary conditions of the town, and to advise with local authorities and local health boards regarding same.

October 27.—Garnett, S. C. Addressed meeting of citizens and school children on health subjects, especially those of special importance to schools.

November 1.—Consulting with Attorney-General concerning certain matters in Anderson, S. C., relative to disposal of carcass of dead animals, conerning which prosecution was threatening.

November 3.—Visited Barnwell, S. C., to advise with local board of health and civic authorities, relative to drawing up code of health laws for the town.

November 5-6.—Marion, S. C. Visited Meadow Hill School to diagnose cases of itch, pediculosis, etc., and see that quarantine rules against admission of children suffering from these and minor communicable diseases were enforced.

November 11-17.—Chattanooga, Tenn., in attendance on convention of Southern Medical Association, Public Health Section.

November 19-20.—Visited Rock Hill, S. C., to make a thorough inspection of Winthrop College by order of the Executive Committee of the State Board of Health. Delivered address to student body.

November 21.—Visited Sharon, S. C., on complaint to see that the compulsory vaccination law was enforced in Plainsville School.

November 21-22.—Visited Clemson College to make a thorough inspection of the College by order of the Executive Committee of the State Board of Health.

November 27.—Visited Salters, S. C., to inspect the school and investigate cause of sickenss reported among the scholars.

November 28-29.—New Brookland, S .C., checking up reported influenza epidemic.

December 1.—New Brookland, S. C. Interview with local authorities on influenza situation, etc.

December 4-5.—Visit to Greenwood, S. C., to investigate and find source of infection of 5 cases of typhoid fever among students of Lander College. Two typhoid carriers found among help and dismissed from service—one a maid in kitchen and dining room and one a helper in dairy.

December 7-8.—Sharon, S. C. To inspect several schools in rural districts and see that compulsory vaccination law was enforced.

December 11.—Visit to Orangeburg, S. C., to see and diagnose cases of smallpox in vicinity of Providence, and enforce quarantine laws and vaccination of contacts and school children.

December 12.—Orangeburg, S. C., to make thorough inspection of State Agricultural & Mechanical College, at request of Committee of State Board Health. Delivered address to faculty and student body.

December 13-14.—Timmonsville, S. C., to examine 3 children in Oak Grove School, 8 miles in country who were suspected of being tubercular, at request of school authorities. Delivered address to school authorities and student body.

December 16-17.—Visited Rock Hill, S. C., at request of local health officer, to investigate case of smallpox, and enforce vaccination of contacts in boarding house in Blue Buckle Mill Village.

A. H. Hayden, M. D.,
Epidemiologist, State Board of Health.

HYGIENIC LABORATORY REPORT.

To the Chairman and Members of the Executive Committee, South Carolina State Board of Health:

Gentlemen: I have the honor to submit the following report of the work of the Hygienic Laboratory for the year 1922.

On the resignation of Dr. F. A. Coward as Director of the Laboratory to accept a similar but more remunerative position in another State, the undersigned, who has been connected with the Laboratory since 1917, was appointed to succeed him August 1, 1922.

Under the efficient administration of Dr. Coward since its establishment in 1909 the Laboratory has developed into a widely known and widely used institution, the scope and value of its work increasing from year to year. The death of Dr. Coward at Helena, Montana, on December 3rd was a great loss to his host of friends and to the medical profession in general.

1. *Personnel.*—The members of the Laboratory staff are H. M. Smith, M. D., Director; James R. Cain, Bacteriologist; Miss

Eugenia McDonald, Technician; and Miss Margaret Davis, Stenographer.

2. *Funds.*—By August 1, the appropriations for Office Supplies and other supplies were exhausted. Request of the Budget Commission for the additional sum of $654.33 to be set aside from the Civil Contingent Fund and applied to these items was approved and granted September 1, 1922.

By November 1, the exhaustion of the funds for various items required the transfer of $158.00 from our appropriations for various other supplies and the setting aside of $103.50 additional from the Civil Contingent Fund, in order to meet the most pressing of the Laboratory needs.

3. *Diagnostic Tests.*—Twenty-seven thousand, six hundred and twenty-eight tests were performed at the Laboratory during the year 1922, the Wasserman tests leading with 15,873, of which 2248, or 14%, were positive for syphilis. Since 1920 there has been a yearly decrease in the *positive* Wassermann findings, the year 1920 showing 27%; 1921, 19%; and 1922, 14% positive. 7008 Widal tests gave 1230, or 17%, positive typhoid or paratyphoid reactions. Only 537 blood specimens for malarial examination were received, 5% of them being positive.

Of the 568 animal brains examined for rabies 258, or 45%, were found positive. Inaddition, doubtless numberous other rabid animals, unexamined, have died or been killed in the State during the year.

With slight modification the A. P. H. A. Standard Methods for water analysis have been adopted, and all water samples are now subjected to these tests.

The tabulated statement attached hereto gives the character and findings of all tests in detail.

4. *Typhoid Vaccine.*—Owing to the great prevalence of typhoid fever throughout the State this year, there has been a greater demand for typhoid vaccine than ever before. Sixty-nine thousand, four hundred and twenty-six ampoules have been sent out during the year, indicating a much greater use of the method of typhoid immunization in the State than in any previous year.

5. *Pasteur Treatment.*—The rabies situation in South Carolina never improves. It is growing worse. The number of rabid animals and the number of human beings bitten are increasing every year. Seven hundred and sixty-nine persons this year have been

given Pasteur treatment, following exposure to rabies. Three persons died of rabies during the year, two of whom had received the anti-rabic vaccine treatment complete. One did not request treatment until three weeks after being bitten. He developed rabies and died before the treatment was completed. The first fully treated case did not develop rabies until over ten months after finishing treatment, such delay being a very rare occurrence. The other fully treated case developed the disease about two and a half months after completion of treatment.

Florence County heads the list with the greatest number of treated cases (60), followed next in order by Spartanburg (58), Anderson (56), Greenville (55), Darlington (46), Richland (45), Sumter (40), Greenwood (39), and so on down, with Berkeley and Laurens Counties showing no cases.

The Piedmont section shows the greatest prevalence of rabid animals, followed closely by the central portion of the State, while the coastal region shows the lowest prevalence of all sections of the State—the density of population evidently determining the relative proportion.

From a practical standpoint the attempt to eliminate rabies by such restrictive measures as the destruction of rabid and stray dogs and the muzzling or quarantining of all others will probably always be a failure in this country, as those measures will not be carried out sufficiently rigorously. The logical, scientific, and practical method for the eradication of rabies would appear to be the compulsory prophylactic inoculation of all dogs in the State by the single injection of a dose of rabies vaccine at the owners' expense. This method has been tried out, particularly by Umeno in Japan, on thousands of dogs with absolute success.

Connecticut has been the first State to recognize officially the value and efficiency of such inoculation, requiring in affected areas either the quarantining of all unbitten dogs or, instead, their prophylactic inoculation by the single injection method. The Connecticut plan, however, is only a compromise and can never prove effectual. If South Carolina will by legislative act adopt the plan of making compulsory the prophylactic anti-rabic inoculation of all dogs within the State, not only the control but the eradication of rabies and its attendant evils will be accomplished.

Respectfully,

H. M. Smith, M. D.
Director of Laboratory.

SUMMARY OF LABORATORY WORK FOR THE YEAR 1922.

I. DIAGNOSTIC TESTS.

	Positive	Negative	Doubtful	Total
1. Blood:				
(1) Widal Tests:				
(a) B. typhosus	1 123	2 307	74	3 504
(b) B. paratyphosus	107	3 388	9	3 504
(2) Plasmodia	27	510	.....	537
(3) Cultures	1	1	.....	2
2. Sputum:				
(1) B. tuberculosis	327	1 154	.....	1 481
3. Stools:				
(1) Parasites:				
(a) Ascaris lumbricoides	22	1	.....	23
(b) Endamoeba coli	1	.....	.....	1
(c) Endamoeba histolytica	4	7	.....	11
(d) Musca domestica, larvae	1	.....	.....	1
(e) Oxyuris vermicularis	1	.....	.....	1
(f) Taenia nana	15	1	.....	16
(g) Teania saginata	1	.....	.....	1
(h) Trichiuris trichiura	1	.....	.....	1
(i) Uncinaria	124	538	.....	662
(2) Cultures:				
(a) B. typhosus	.....	11	.....	11
(b) B. paratyphosus	2	9	.....	11
4. Urine:				
(1) Cultures:				
(a) B. typhosus	1	8	.....	9
(b) B. paratyphosus	.....	9	.....	9
5. Bile:				
(1) Culture for B. typhosus	.....	1	.....	1
6. Pus and Excreta:				
(1) Gonococcus	76	314	.....	390
(2) B. tuberculosis	.....	14	.....	14
(3) Koch-Weeks bacillus	.....	1	.....	1
7. Nose and Throat secreta:				
(1) Cultures for B. diphtheriae	123	404	.....	527
8. Spinal Fluid:				
(1) Meningococcus	.....	9	.....	9
(2) Cell count	1	.....	.....	1
9. Water:				
(1) Culture for B. coli	261	197	.....	458
10. Milk:				
(1) Culture for B. coli	1	.....	.....	1
11. Animal Heads for Rabies	258	261	49	568
Total	2 478	9 145	132	11 755

12. Wassermann Tests:

(1) Blood:

(a) Very strongly positive (++++)	1 921
(b) Strongly positive (+++)	218
(c) Positive (++)	98
(d) Weakly positive (+)	321
(e) Doubtful (±)	575
(f) Negative (—)	12 401
(g) Anticomplementary (AC)	217
	15 751

(2)	Spinal fluid:		
	(a) Very strongly positive (++++)	11	
	(b) Doubtful (+)	2	
	(c) Negative (—)	68	
	(d) Anticomplementary (AC)	41	
			122
	Total		15 873
(3)	Specimens received unsuitable for examination		314

II. PASTEUR TREATMENTS.

Complete treatments December 31st	702	
Under treatment December 31st	24	
Treatments discontinued by request of patients	43	
Total		769
Treated at home	732	
Treated at Laboratory	37	
		769

Distribution of Treatments according to Counties:

Abbeville	3	Chesterfield	10	Hampton	2
Aiken	27	Clarendon	9	Horry	8
Allendale	9	Colleton	2	Jasper	8
Anderson	56	Darlington	46	Kershaw	8
Bamberg	3	Dillon	4	Lancaster	8
Barnwell	6	Dorchester	1	Laurens	0
Beaufort	1	Edgefield	3	Lee	24
Berkeley	0	Fairfield	4	Lexington	23
Calhoun	2	Florence	60	Marion	11
Charleston	3	Georgetown	12	Marlboro	23
Cherokee	22	Greenville	55	McCormick	2
Chester	5	Greenwood	39	Newberry	6

Oconee	16
Orangeburg	21
Pickens	22
Richland	45
Saluda	1
Spartanburg	58
Sumter	40
Union	21
Williamsburg	12
York	28
Total	769

III. TYPHOID VACCINE.

Number of ampoules sent out	69 426

DIVISION OF VENEREAL DISEASE CONTROL.

The 1922 General Assembly failed to make an appropriation for the continuation of the activities of the Division of Venereal Disease Control during the year 1922, only appropriating $4,340 for salaries from January 1st, 1922 through March 15th, 1922 as per financial statement attached.

January 1, 1922 there were seven Venereal Disease Clinics in operation in South Carolina:—Columbia, Greenville, Orangeburg, Florence, Newberry, Spartanburg, Union.

Three of these clinics: Florence, Newberry and Union discontinued operation March 15th, 1922 owing to the lack of funds, these counties also having failed to make an appropriation .

The counties of Richland, Greenville, Orangeburg and Spartanburg made appropriations which were supplemented by the cities in which the clinics were located. The Federal Government gave to South Carolina the sum of $3,583.73 for Venereal Dis-

ease Control and this fund was matched by the money which had been appropriated for the clinics in Columbia, Greenville, Orangeburg and Spartanburg, as the Government fund had to be matched before it would become available for use in the State, and the report attached shows that we were able to do a limited amount of work during the year.

The Federal Government has made an allotment of $3,583.73 to the State of South Carolina for Venereal Disease Control work in South Carolina during the year 1923 provided it is matched by a like amount, and we have requested the General Assembly to make an appropriation of $3,583.73 with which to match the Federal fund. If this is done we will be able to carry out a generalized program which we have not been able to do during the year 1922 as the Federal appropriation could only be matched with local funds as no State appropriation was available.

During the year there has been quite a number of requests from physicians and individuals for Salvarsan for treatment and this office has only been able to comply with these requests because of the fact that the Federal Government in addition to the appropriation furnished the State Health Department with free Salvarsan.

The administration of the Division of Venereal Disease Control has been carried on under the immediate supervision of the State Health Officer assisted by one part time clerk.

ANALYSIS OF WORK DONE IN STATE: 1922.

Cases Treated:

Syphilis male and female	2 547
Gonorrhoea male and female	3 072
Chancroid male and female	237
Total all cases	5 856
Visits	49 329
Examinations	10 974
Treatments	67 477
Neoarsphenamine	12 900
Mercury Salicylate	16 800

BUREAU OF VITAL STATISTICS.

Columbia S. C., Dec. 6, 1922.

Dr. J. A. Hayne,

State Health Officer,

Columbia, S. C.

My dear Doctor: Herewith please find my report for ten months ending October 31st. The birth decrease you will note is not very large, but this condition obtains over the entire registration area.

Deaths have decreased slightly, but the next two months will bring in all delays and the rate per M. will be about the same as last year. The office is as usual.

With regards,

Very truly yours,

C. W. Miller,
Ass't State Registrar.

TOTAL NUMBER OF BIRTHS AND DEATHS IN SOUTH CAROLINA FOR TEN MONTHS ENDING OCTOBER 31, 1921 AND 1922.

BIRTHS.

1921		1922	
Number	Rate per M.	Number	Rate per M.
39,593	28.3	36,822	25.7

DEATHS.

1921		1922	
Number	Rate per M.	Number	Rate per M.
16,548	11.8	16,411	11.5

TOTAL NUMBER OF BIRTHS AND DEATHS IN SOUTH CAROLINA FROM JANUARY TO OCTOBER 31, 1921.

	Deaths	Births	S. Births
Abbeville	207	669	25
Aiken	379	878	50
Allendale	117	323	28
Anderson	641	1 948	81
Bamberg	221	548	47
Barnwell	152	335	17
Beaufort	324	492	55
Berkeley	284	673	36
Calhoun	194	533	43
Charleston	1 670	2 350	283
Cherokee	237	712	32
Chester	271	608	26
Chesterfield	297	835	34
Clarendon	299	916	62
Colleton	159	521	26
Darlington	468	1 029	64
Dillon	238	607	29
Dorchester	143	325	25
Edgefield	160	462	24
Fairfield	201	675	20
Florence	626	1 387	104
Georgetown	276	611	38
Greenville	946	2 260	85
Greenwood	316	767	27
Hampton	194	446	32
Horry	319	1 053	55
Jasper	102	224	18
Kershaw	188	593	16
Lancaster	255	685	28
Laurens	399	949	44
Lee	239	638	42
Lexington	293	781	26
Marion	198	514	28
Marlboro	373	916	57
MsCormick	111	318	24
Newberry	314	924	40
Oconee	203	757	29
Orangeburg	621	1 727	138
Pickens	206	823	43
Richland	1 286	1 740	83
Saluda	113	321	13
Spartanburg	818	2 088	113
Sumter	543	1 153	82
Union	198	633	15
Williamsburg	282	860	43
York	475	1 028	70
	16 556	39 635	2 300

Death Rate per M., 11.8. Birth Rate per M., 28.3.

TOTAL NUMBER OF BIRTHS AND DEATHS IN SOUTH CAROLINA FROM JANUARY TO OCTOBER 31, 1922

	Deaths	Births	S. Births
Abbeville	247	601	29
Aiken	442	807	50
Allendale	137	337	36
Anderson	659	1 836	80
Bamberg	161	458	40
Barnwell	190	327	19
Beaufort	405	491	65
Berkeley	282	527	49
Calhoun	178	468	41
Charleston	1 576	2 183	216
Cherokee	269	677	49
Chester	240	661	29
Chesterfield	265	765	45
Clarendon	299	772	37
Colleton	192	553	30
Darlington	396	911	60
Dillon	195	565	34
Dorchester	150	357	32
Edgefield	182	368	19
Fairfield	216	561	20
Florence	618	1 287	102
Georgetown	252	478	32
Greenville	919	2 206	104
Greenwood	347	684	31
Hampton	186	410	33
Horry	296	932	50
Jasper	89	213	7
Kershaw	213	651	29
Lancaster	250	671	30
Laurens	351	870	44
Lee	219	658	37
Lexington	263	641	33
McCormick	125	286	29
Marion	200	442	23
Marlboro	362	757	54
Newberry	308	815	57
Oconee	252	699	34
Orangeburg	681	1 674	126
Pickens	215	841	35
Richland	1 161	1 525	122
Saluda	132	316	13
Spartanburg	772	2 101	141
Sumter	566	1 112	96
Union	187	578	25
Williamsburg	309	746	48
York	457	1 004	62
Total	16 411	36 822	2 377

Death Rate per M., 11.5. Birth Rate per M., 25.7.

DEATHS FROM PELLAGRA IN THE FOLLOWING COUNTIES FOR TEN MONTHS ENDING OCTOBER 31, 1921 AND 1922.

	1921	1922
Abbeville	3	10
Aiken	7	...
Allendale	1	...
Anderson	10	20
Bamberg	2	1
Barnwell	1	2
Beaufort	...	1
Berkeley	...	4
Calhoun	4	3
Charleston	33	37
Cherokee	6	15
Chester	9	11
Chesterfield	1	...
Clarendon	1	1
Colleton	...	1
Darlington	4	3
Dillon	3	2
Dorchester	3	3
Edgefield	1	...
Fairfield	7	8
Florence	7	9
Georgetown	6	8
Greenville	9	14
Greenwood	5	12
Hamptcn	1	...
Horry	2	2
Jasper	...	...
Kershaw	2	2
Lancaster	7	6
Laurens	6	9
Lee	5	1
Lexington	7	3
McCormick	2	1
Marion	2	2
Marlboro	3	3
Newberry	8	4
Oconee	2	7
Orangeburg	6	6
Pickens	3	7
Richland	57	59
Saluda	...	...
Spartanburg	8	12
Sumter	5	9
Union	2	6
Williamsburg	1	1
York	8	14
Total	260	319

Deaths from Typhoid Fever in the following counties for ten months ending October 31, 1921 & 1922.

DEATHS FROM TYPHOID FEVER IN THE FOLLOWING COUNTIES FOR TEN MONTHS ENDING OCTOBER 31, 1921 AND 1922.

	1921	1922
Abbeville	6	8
Aiken	11	9
Allendale	1	6
Anderson	10	19
Bamberg	6	6
Barnwell	6	8
Beaufort	...	1
Berkeley	2	2
Calhoun	7	1
Charleston	21	13
Cherokee	6	7
Chester	9	4
Chesterfield	5	3
Clarendon	6	3
Colleton	2	1
Darlington	14	11
Dillon	10	6
Dorchester	3	1
Edgefield	5	3
Fairfield	1	2
Florence	15	9
Georgetown	2	2
Greenville	8	10
Greenwood	12	9
Hampton	7	4
Horry	4	2
Jasper	...	...
Kershaw	7	6
Lancaster	4	4
Laurens	14	13
Lee	4	5
Lexington	4	7
McCormick	1	5
Marion	4	2
Marlboro	2	10
Newberry	7	6
Oconee	3	12
Orangeburg	15	8
Pickens	11	8
Richland	14	17
Saluda	3	5
Spartanburg	6	13
Sumter	14	7
Union	3	...
Williamsburg	10	6
York	5	5
Total	310	289

COMPARATIVE STATEMENT OF DEATHS IN THE FOLLOWING CITIES FOR 1921 AND 1922.

	1921	1922
Abbeville	47	66
Aiken	61	82
Anderson	176	228
Bennettsville	38	45
Camden	35	57
Charleston	1 218	1 154
Cheraw	38	41
Chester	83	56
Clinton	54	36
Columbia	1 044	1 011
Darlington	58	60
Easley	42	45
Florence	215	233
Gaffney	87	92
Georgetown	74	54
Greenville	278	270
Greenwood	101	102
Laurens	64	47
Newberry	57	68
Orangeburg	90	96
Rock Hill	105	119
Spartanburg	296	265
Sumter	143	144
Union	59	65
Total	4 465	4 436

Deaths from Tuberculosis, all forms, in the following counties for ten months ending October 31, 1921-1922.

DEATHS FROM TUBERCULOSIS, ALL FORMS IN THE FOLLOWING COUNTIES FOR TEN MONTHS ENDING OCTOBER 31, 1921 AND 1922.

	1921	1922
Abbeville	12	22
Aiken	22	45
Allendale	7	13
Anderson	48	38
Bamberg	10	5
Barnwell	12	14
Beaufort	23	21
Berkeley	6	11
Calhoun	12	9
Charleston	122	111
Cherokee	26	18
Chester	17	14
Chesterfield	16	13
Clarendon	11	8
Colleton	3	7
Darlington	28	42
Dillon	15	14
Dorchester	11	15
Edgefield	8	8
Fairfield	14	17
Florence	50	51
Georgetown	16	13
Greenville	141	137
Greenwood	23	20
Hampton	86	12
Horry	8	12
Jasper	5	4
Kershaw	20	8
Lancaster	24	15
Laurens	37	22
Lee	11	18
Lexington	16	10
McCormick	4	7
Marion	24	19
Marlboro	27	34
Newberry	27	29
Oconee	14	12
Orangeburg	34	38
Pickens	9	17
Richland	127	97
Saluda	6	9
Spartanburg	65	71
Sumter	50	35
Union	21	23
Williamsburg	22	28
York	58	42
Total	1 270	1 228

The reason for the large number of deaths from Tuberculosis in Greenville County is on account of the United States Tuberculosis Sanitorium being situated in the county.

TOTAL NUMBER OF DEATHS FROM THE FOLLOWING DISEASES FROM JANUARY 1st TO OCTOBER 31st, 1921 AND 1922

	1921		1922	
	Number	Rate per 100,000	Number	Rate per 100,000
Tuberculosis, Pulmonalis	1,172	83.6	1,121	78.2
Tuberculosis, Other Forms	98	7.0	107	7.4
Pellagra	260	18.5	319	22.3
Diphtheria	117	8.3	93	6.5
Scarlet Fever	4	.28	7	.5
Measles	19	1.3	1	.06
Typhoid Fever	310	22.1	289	20.2
Small Pox	8	.57	5	.4
Cancer and Malignant Tumors	443	31.6	482	33.6
Malaria	176	12.5	196	13.7
Meningitis, Cerebro Spinal	29	2.1	27	1.9
Whooping Cough	82	5.8	45	3.1
Pneumonia	610	43.5	792	55.3
Pneumonia, Broncho	431	30.7	437	30.5
Pneumonia, Hypostatic	9	.64	12	.8
Pleurisy	18	1.3	13	.9
Diseases of Circulation	2,289	163.1	2,506	175.0
Diseases of Kidneys	1,196	85.2	1,068	74.6
Syphilis	62	4.4	55	3.8
Syphilis, Congenital	44	3.1	50	3.5
Tetanus	9	.64	20	1.4
Tetanus, Neonatorum	18	1.3	19	1.3
Dysentery	155	11.0	130	9.1
Dysentery, Amebic	9	.64	10	.7
Scurvy	.....	.....	.....	.....
Intestinal Diseases	1,039	74.1	852	59.5
Erysipelas	10	.71	18	1.2
Homicide	239	17.0	210	14.6
Suicide	57	4.1	48	3.4
Auto Accidents	48	3.4	45	3.1
Railroad Accidents	44	3.1	61	4.2
General Accidents	245	17.5	210	14.6
Lightning	24	1.7	29	2.0
Legal Electrocutions	5	.36	4	.2
Poliomyelitis	13	.92	10	.7
Influenza and LaGrippe	91	6.5	176	12.2
Encephalitis, Lethargic	23	1.6	18	1.2

BIRTHS IN SOUTH CAROLINA ACCORDING TO RACE AND SEX FOR NINE MONTHS ENDING SEPTEMBER 30, 1921 AND 1922.

1921.

White		Black	
Male	8,788	Male	9,155
Female	8,548	Female	8,791
	17,336		17,946
Unknown	57		
Indian	1		

1922.

White		Black	
Male	8,250	Male	8,517
Female	7,727	Female	8,205
	15,977		16,722
Unknown	40		

DEATHS IN SOUTH CAROLINA, ACCORDING TO RACE AND AGE FOR THE TEN MONTHS, ENDING OCTOBER 31st, 1921 AND 1922.

	White Male	White Male	Black Male	Black Male
	1921	1922	1921	1922
Under 1 year	804	704	1 383	1 202
1 to 5 years	334	309	424	400
5 to 10 years	80	64	128	121
10 to 20 years	180	164	263	329
20 to 30 years	230	210	500	507
30 to 40 years	181	199	373	419
40 to 50 years	260	257	445	428
50 to 60 years	296	318	355	421
60 to 70 years	503	502	325	420
70 to 80 years	430	456	331	340
Over 80 years	164	168	197	242
Unknown	22	26	32	36
	3 484	3 376	4 756	4 863

	White Female	White Female	Black Female	Black Female
	1921	1922	1921	1922
Under 1 year	614	547	1 179	1 030
1 to 5 years	296	284	421	359
5 to 10 years	70	55	135	145
10 to 20 years	123	150	425	374
20 to 30 years	258	241	751	757
30 to 40 years	232	257	584	567
40 to 50 years	212	250	502	489
50 to 60 years	212	226	330	345
60 to 70 years	383	386	317	338
70 to 80 years	441	446	281	306
Over 80 years	265	284	244	276
Unknown	14	19	24	31
	3 120	3 145	5 193	5 017

For 1921—Indian .....3 For 1922—Indian 8

White deaths ..... 6,521 Rate per M. 9.2

Negroes ..... 9,880 Rate per M. 13.6

THE BUREAU OF CHILD HYGIENE AND PUBLIC HEALTH NURSING.

I. ADMINISTRATION.

Personnel.

Director, salary paid by State, supplemented by Southern Division A. R. C. and Metropolitan Life Insurance Company.

Two District Supervisors, salaries paid by State, supplemented by Southern Division, A. R. C.

Consultant Pediatrist, (part time), salary paid by federal funds.

Consultant Nurse for Maternity and Infancy work, salary paid by federal funds.

Two Field Nurses for Maternity and Infancy work, salary paid by federal funds.

Negro Field Nurse, salary paid by Mission Board of M. E. Church, South.

Secretary to Director, salary paid by federal funds.

Secretary to Staff, salary paid by State, supplemented by federal funds.

Clerk supplied to Bureau of Vital Statistics, salary supplemented by federal funds.

The Director of the Bureau is responsible to the State Health Officer for the administration of the entire department.

Each district supervisor has under her direction the county nurses, community nurses, Metropolitan nurses and industrial nurses who affiliate with the Bureau. Those who do not affiliate, work under the direction of the organization employing them.

The consultant pediatrician is a member of the advisory board of pediatrists, selected from the various county and state medical assemblies, addresses public meetings, writes bulletins on the hygiene of maternity and infancy, newspaper articles and outlines letters to be written to expectant mothers and mothers of small children.

The consultant nurse for maternity and infancy work supervises the instruction of midwives through the field nurses, outlines lectures, writes bulletins relating to the hygiene of maternity and infancy, assumes responsibility for the preparation of child welfare exhibits and the development of infant welfare projects for local agencies when desired. She prepares

educational programs for public meetings, short baby talks for use of nurses and club women, and assists with baby conferences.

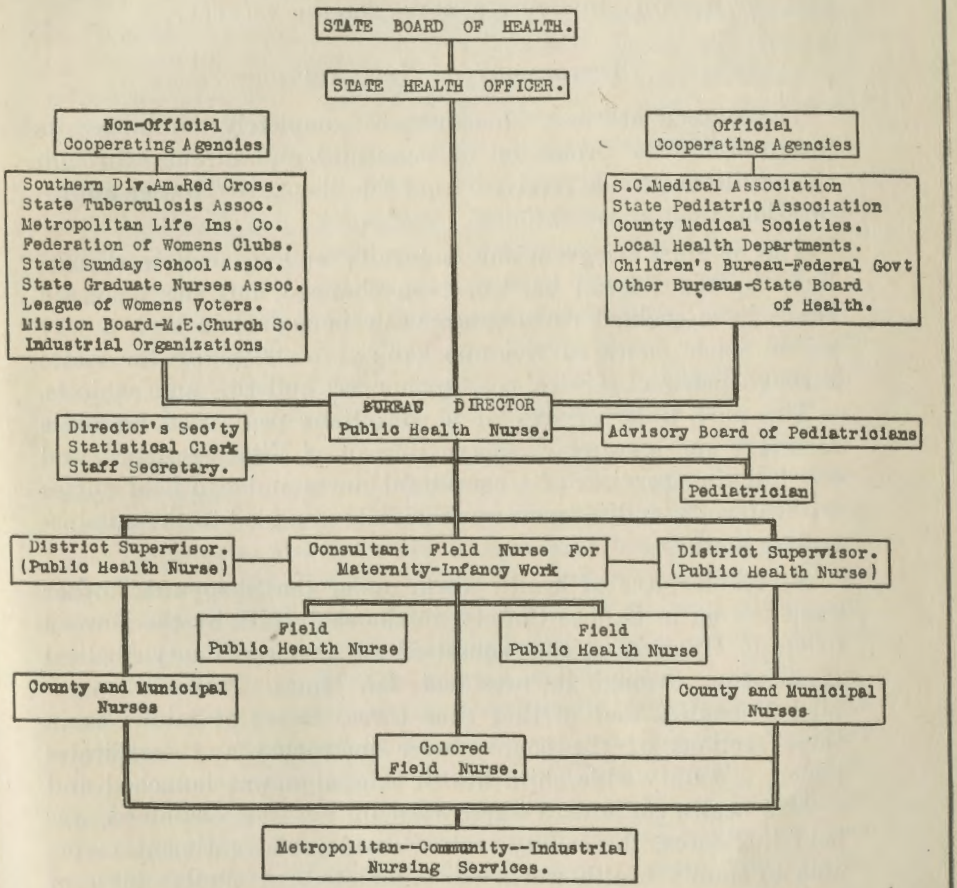
The two field nurses promote the maternity and infancy program through midwifery classes, baby campaigns, lectures and home visitation.

The negro field nurse's work consists of a demonstration of public health activities among her own people through midwifery classes, home nursing classes and school inspection. During the year she has conducted this type of work in Dillon, Marion, Orangeburg, Marlboro and Spartanburg counties. In this period she has graduated 147 midwives and 216 women from her home nursing classes.

ORGANIZATION

BUREAU OF CHILD HYGIENE .

South Carolina State Board of Health.



The Bureau of Child Hygiene promotes its health program through the county and community nursing services. In the beginning of the year 1922, we had 27 nursing services in operation with 41 nurses on duty. During the year we have had a number of services discontinued and a number of new services initiated, so that at the end of the year, we have 30 services in operation, with 47 nurses on duty. In almost every instance, the discontinuance of a service has been due to the resignation of the nurse and our inability to secure a nurse for the vacancy.

Development of New Features.

The Bureau has been able to more completely administer its program for the protection of maternity and infancy through the additional funds received from the Sheppard-Towner appropriation.

The original program for maternity and infancy work outlined by the Bureau has not been changed, but the increased funds have enabled us to enlarge our personnel in such a way as to reach many of the unorganized districts of the State through personal service, correspondence, bulletins and exhibits.

The part time services of a consultant pediatrist, an office secretary and a secretary in the Bureau of Vital Statistics, and the full time services of a consultant nurse and two field nurses for maternity and infancy work have been added to the adminstrative staff.

A notable piece of health work, under the Sheppard-Towner fund put on in Oconee County, in the early fall, by the Bureau of Child Hygiene, at the request of the Oconee County Medical Association, through its president, Dr. Hines. This work occupied 3 months, and in that time three classes of midwives in three sections of the county were instructed and certificates issued, a county-wide child health campaign was launched and a child health conference where 341 children were examined, was held in Seneca, the county seat. Considerable sentiment favorable to county health work was stimulated. A similar piece of health work has been undertaken in Horry County, and the response has been gratifying and encouraging.

The consultant pediatrician has made contact with the county medical societies through district medical meetings and correspondence, requesting the appointment of a child welfare com-

mittee in each county medical society, a response to this has been met in several counties, with a resolution, endorsing the work of the Bureau, and signifying a willingness to cooperate in its activities, by the appointment of a child welfare committee.

Richland County Medical Association endorsed the work of the Bureau and appointed a child welfare committee, through which the State Board of Health was invited to give a three months' demonstration of the Maternity and Infancy Program in Richland County. The State Board of Health has acceded to this request and plans have been made which will become effective at the earliest possible moment. As a part of this program, a class in Home Nursing has been initiated in the State Industrial School for white girls under the direction of the consultant nurse.

In addition to the increased administrative personnel, the federal funds have been used to supplement a number of local nursing services. The three most distinctive maternity and infancy projects which have been promoted by local agencies, are those of Marion County, Charleston and Chester cities. Marion County employs two full time nurses, one of whom devotes her time exclusively to maternity and infancy work.

The supplement to Charleston enables them to employ an additional staff nurse, which makes possible a greater development of the maternity and infancy program which had already been initiated by the unit. Here, three baby health centers are in operation, two for white babies and one for negroes. These centers have a full attendance each week, with local physicians in charge. Here, too, the nursing unit has been enabled to develop the program for the instruction of midwives. This educational effort is reinforced by a city ordinance which prohibits the practice of midwifery by any person who has not completed the course outlined by the Bureau of Child Hygiene. Nurses supervise the actual work of the midwives in the home, and the value of this educational work among the midwives has been demonstrated by the fact that they recognize more readily difficult and abnormal cases and refer them much more promptly to the physicians and nurses.

The negroes in Chester have been the first to assume financial responsibility for the maintenance of their own nursing serv-

ice. Stimulated by the city health officer, the most progressive negroes in the town formed a public health nursing organization, and at their request, five representative white women of the community act as an advisory board. Through the efforts of this organization, one half the funds necessary for the maintenance of a nursing service were secured locally and this amount was matched equally with federal fnuds. An intelligent negro nurse, with public health experience, has been employed for maternity and infancy work and already the results of her efforts are apparent.

Cooperation of State Agencies.

The State Federation of Women's Clubs, the State Sunday School Association and the League of Women Voters actively supported legislatiton favoring the acceptance of the Sheppard-Towner bill.

During the convention of the State Teachers' Association, space was given in the High School Building for a child health exhibit. A nurse from the Bureau was in attendance during this time. During the week, various merchants in town displayed material in their windows relating to child hygiene.

The State Federation of Women's Clubs adopted a health program the text of which was published by the Bureau and the individual clubs throughout the State promoted the development of this program. Through these activities, much sentiment was created for the extension of child welfare and public nursing.

The Mission Board of the M. E. Church, South, has continued its support of the negro field nurse. Local committees of this body have rendered valuable service in stimulating interest in this work among the negroes themselves.

The State Sunday School Association and the Bureau produced a Child Life Pageant which was presented by the local Sunday School committees, in connection with their Cradle Roll programs. When desired, a nurse from the Bureau was loaned to assist in the preparation of these programs.

The Palmafesta organization extended cooperation by designating one day of its display as "Baby Day," initiating the the guidance of the Bureau.

II. FIELD WORK.

Lectures, Educational Literature, Demonstration Material.

In addition to the general field work, the educational program has been promoted through lectures, educational literature and demonstration material.

During the year, the administrative staff has addressed 74 public meetings, thereby reaching approximately 2538 people.

The Bureau has published two additional bulletins:

1. The Nursing Series No. 9—The Public Health and Education, which is designed as a guide to nurses organizing and conducting Little Mothers' Leagues.

2. Health Program for 1922-23—a handbook designed for use of the State Federation of Women's Clubs.

The Bureau has distributed 12,351 pieces of educational literature. Some of this material was the Bureau's own publications and much of it was publications from the Federal Children's Bureau and the Metropolitan Life Insurance Company.

The Bureau has added new demonstration material to its equipment. Four new moving picture reels, "Out of the Shadows," "The Baby's Bath," "The Kid Comes Thru," and "Our Children," have been in almost constant circulation.

Two Mary Gay theatres are available to the nurses for their health work in the schools.

Exhibits.

The Bureau's exhibit at the State Fair, "Healthland," held the interest of a great many visitors and created much favorable comment.

Nurses' services and exhibit material was loaned to a number of county fairs.

Local nurses in the field report the sum total of their accomplishments as follows:

SUMMARY OF FIELD WORK FOR THE YEAR ENDING NOVEMBER 30, 1922.

Visits.

Total number of visits	39,340
Nursing	9,242
Instructive	11,810
School	2,146
Social service	2,806
Conference	5,132
Sanitation inspected	8,204

Speicmens Collected.

Urine	312
Feces	1,293
Sputum	19

Medical Inspections.

Schools inspected	1,102
Pupils inspected	28,040
Pre-school age inspected	1,030
Total number inspected	*30,172
Defectives	11,229
Total defects	18,609
Defective eyes	1,473
Defective ears	725
Defective nose and throat	6,255
Defective teeth	7,795
Defective miscellaneous	2,361

Tuberculosis.

Home visits to diagnosed cases	1,401
Home visits to suspects	488
Total visits	1,889
Cases sent to sanatorium	67
Clinics held	81
Cases treated at clinic	423
Examinations secured by nurses	1,031
Cases found positive	180

Child Welfare.

Prenatal visits	2,355
Postnatal visits	1,442
Visits to infants under 2 years	3,801
Baby conferences	358
Babies examined at conference	3,468

*Of this number, 8969 were examined by health officers, assisted by nurses.

Educational.

Talks to school children	1,076
Attendance	15,990
Talks to public meetings	290
Attendance	16,841
Home nursing classes	303
Attendance	3,215
Certificates	241
Midwives enrolled	503
Classes held	134
Certificates given	236
Exhibits held	60
Literature distributed	24,295

Corrections and Treatments.

Dental Treatments	1,771
Eye treatments	134
Eye corrections	179
Throat treatments	468
T. and A. operations	440
Vaccinations	5,560
Anti-typhoid treatments	13,277
Other treatments	2,094
Clinics held	144
Treatments in clinics	1,767

Classification of Patients.

New cases during the year	3,411
Prenatal	567
Postnatal	237

Infants under 2 years	514
Tuberculosis	329
Typhoid	157
Other Com. diseases	392
Surgical	425
Medical	790
Patients discharged	2,448
Recovered	1,409
Improved	459
To hospital	149
Dead	142
To other care	289

ANNUAL REPORT OF DEPARTMENT OF RURAL SANITATION AND COUNTY HEALTH WORK.

L. A. Riser, M. D., In Charge.

To the Chairman and Members of the Executive Committee, South Carolina State Board of Health.

Gentlemen: I herewith submit a narrative and statistical report of work done by the Department of Rural Sanitation and County Health Work during the year 1922:

This year we have worked in eighteen counties in the State. Seven of these counties have full time health departments. In eleven others we have put on some piece of educational health work, remaining two months in some of these counties and not less than two weeks in any county. Three counties, by request, have had hookworm surveys and free treatment furnished for those infected.

Each county having a full time health department shows a remarkable decrease in the reductions of typhoid fever and also in the infant death rate from intestinal diseases. It is a significant fact that the number of reported infant deaths from intestinal diseases and also the number reported deaths from typhoid is much lower in the counties with full time health departments than in other counties, and we believe that the total deaths for the State from typhoid and intestinal diseases of infants will show a splendid decrease as the result of the lowered death rate in these counties with full time health departments.

The rural population is taking a greater interest in health work each year, this is evidenced by the increasing number of people who visit the office of the health departments. In one county 5,910 people visited the office and as there are only 26,000 in the county this would mean that more than one-fifth of the entire population of the county came to the office with some special problem during the year.

We have found such a large number of children with defective teeth, and in those schools where the teeth have been put in good order such a remarkable improvement of the children is shown, we believe a traveling dental clinic will be one of the best investments the State can make. We are therefore requesting an appropriation of $2,500 to begin this work, and ask the assistance of the Board in securing this extra appropriation.

We are only asking for one other slight increase—this amount is for the traveling Moving Picture Unit. We have accomplished so much with a part time appropriation we believe it would be advisable to make this a permanent feature of our work, and a continuous service would enable us to cover twice as much territory.

Below we are giving under separate heads the various activities of this department:

Educational.

As stated above we have this year done some educational work in eighteen counties. The educational work has consisted of public lectures, 390 in number with attendance of 22,276; talks to school children, 502 in number with 20,139 in attendance; personal letters numbering 8,617, literature and circular letters were sent out and house to house visits made. The total homes visited number 14, 293.

The appropriations were so small we were unable to get out very much literature but co-operating agencies have supplied a generous amount and 33,357 pieces of literature were given out where we thought it would be read. The county newspapers have been especially generous in the amount of space they have given to articles relating to health.

Our moving picture was only put on the middle of the year. Our Ford truck was about worn out after two summers of hard service. This was converted into a small Ford car and we got a

new moving picture outfit which does not weigh over 20 pounds. A generator attached to the engine furnished electric power, and we have thus cut down the upkeep more than half. We now have a splendid man in charge and the educational value of these films cannot be overestimated. We have shown these pictures to 84 audiences since the first of August and 16,623 people had the pleasure of seeing them. We have now covered the State with the exception of the coast counties and they will be visited the first of the year. New films are being added each year and we have more requests than we can answer for next year.

Constructive Work.

Some of the counties have been without inspectors for most of the year and this work has consequently suffered. 425 homes have been screened and 1174 homes sanitated. In addition to this several mills have completed their sewerage systems and abattoirs have been built in a great many counties. Nearly 9,000 homes have had the services of inspectors. Schools have been visited and water supplies examined and improved.

Medical Examinations of School Children.

In counties where all the children have been examined we are now devoting our time to correction and treatment of defects found. Only the lower grades and new pupils in upper grades are now being examined. During the year 13,155 pupils were examined and 6,951 found defective. We feel that the results of our school examinations are just beginning to show up as we had three times as many children treated this year as were treated last year. In the follow up work 2,341 children have had defects corrected.

Contagious and Infectious Diseases.

Hookworm:

Four counties have had a general hookworm campaign and free treatment offered to those found infected. One county had also done some special hookworm work in the schools. The Thornwell Orphanage at Clinton, Connie Maxwell at Greenwood and Boys Reformatory at Florence were all furnished with

free treatment to a number of children examined and found infected. There have been 3,368 examinations made, 642 found infected and 503 treated.

Tuberculosis:

We have been particularly active in our tuberculosis work this year. Clinics have been held at which Dr. Cooper, of the State Sanatorium, assisted by the health officers, examined 587 persons and found 23 positive cases. Instruction has been given to these patients and their families and they are being followed up by the health departments. Some have been placed in Sanatoria, others are taking treatment at home. We believe that this type of work will be the means of greatly reducing tuberculosis in the State.

In one of our counties a campaign was put on in the Spring requiring all cattle to be tuberculin tested. This was especially directed against milk cows, the owners of which were selling milk to other families where it was consumed largely by infants and small children. The owners of the cows readily co-operated with us in this undertaking, not only those selling milk but those keeping cows for their own use. 3.4 percent of the cows were found to have tuberculosis. This campaign also resulted in a modern abattoir being built in the county seat.

Typhoid:

95 cases of typhoid were investigated during the year and efforts made to prevent other members of the family from becoming infected. 644 food handlers have also been inspected and certain regulations as to cleanliness enforced. Where cases of typhoid occurred an effort was made to find the focus of infection in order to prevent further spread of the disease. Active campaigns have been carried on and free clinics held in every community at which free anti-typhoid inoculations were given 18,448 inoculations were given at these clinics. Each county reports sections now entirely free from typhoid where it has been prevalent for years. These communities have been thoroughly inoculated. 31,351 anti-typhoid inoculations have been given in the past two years. This disease will soon be exterminated in counties with health departments.

Smallpox:

Smallpox has not been very prevalent in the counties with health departmtents. Compulsory vaccination of the

school children by the health department has practically stamped out smallpox in the counties. 5,607 vaccinations were made. In nine counties in the past three years 60,218 persons have been vaccinated by county health officers.

Diphtheria:

The State this year began furnishing in small quantities toxin-antitoxin for the immunization of small children against diphtheria. Our county health departments have immunized 5,181 children under 10 years of age. The rural districts are clamoring for this treatment and there are a number of communities waiting to have the children given the treatment as soon as our new appropriation is made in order to secure it.

Venereal Disease:

In counties where there are no free clinics for venereal disease these cases when discovered are treated by local physicians and free medicine is furnished by the State. 218 cases of syphilis have been treated and 230 cases of gonorrhea have been treated.

Rabies:

403 Pasteur treatments were adminstered during the year to indigent persons who were bitten by dogs found to be infected with hydrophobia.

Quarantine:

Where contagious diseases were reported or discovered they were quarantined by some member of the health department and the quarantine regulations were carried out according to the State law.

FREE CLINICS.

In addition to the clinics already enumerated above we would like to mention the following:

Tonsil and Adenoid Clinics:

We have made arrangements with nose and throat specialists who have agreed to operate at a nominal cost on all children found to be suffering with diseased tonsils and adenoids. All children whose parents are unable to pay have had these operations performed free of charge. Local infirmaries or school houses were fitted up as hospital wards and the health officer

and nurse had medical care of the children thus eliminating the hospital fee. At one place a local hospital made special provision and the children were taken there. Eighty-seven children have been operated on at these clinics.

Child Welfare Clinics:

This work is principally for children of pre-school age. The counties are divided into districts and each district is visited once a month and meetings for mothers and infants held. At these meetings mothers come for instruction and bring their children for examination. The children are examined, weighed and measured. Nutrition classes are held and the mothers instructed in the proper feeding of children of pre-school age. Children's specialists, dentists and local physicians have assisted the health officers and nurses at these clinics. They have proved to be very popular and are well attended. 97 mothers were instructed and 103 infants examined.

Classes of midwives have been organized and 52 midwives have taken the full course of instruction.

Dental Clinics:

In our free dental clinics 1,769 children had their teeth examined and all these children have had their teeth cleaned. 368 children have had teeth extracted and 287 teeth have been filled. In one of our counties this work is now in progress. Local dentists have offered to do the work at cost and free work for all those unable to pay. In another county a charitable organization agreed to pay for those who were financially unable to do so. 1000 school children with defective teeth are now being made ready to have their teeth put in order. In one county a dentist was employed to go from one rural community to another and free work for all was done. As we have found such a large percentage of children with defective teeth and as bad teeth cause so many of the ills of childhood, we believe this work is going to prove the most beneficial of any yet attempted. We are asking for a special fund this year with which to employ a regular dentist for full time to work in rural communities desiring especial dental work for school children.

Laboratory Work:

One of our counties uses a local laboratory. The other counties have made use of the State laboratory and have sent specimens

of water, sputum, feces, urine and blood to the laboratory for examination. Some of this work is done by each health officer but none of them are sufficiently equipped to do all types of work.

Public Health Nursing:

Each county health department has a Public Health Nurse as a part of its force. To these nurses we wish to give a great deal of credit, especially in infant welfare, obstetrical and prenatal work, they have also assisted in the investigation of infectious and contagious diseases, secured correction and treatment of school children, and have with the health officer, helped conduct various clinics already mentioned.

Conclusion:

We believe that the solution of the Health problem in South Carolina lies in the establishment of a full time county health department in every county in the State. South Carolina is a rural State and if we are to materially reduce our death rate we must direct our energies to the people in the rural districts.

We wish to express our thanks to all existing agencies which have so earnestly co-operated with us in our work. Especially to the women's organizations in South Carolina and to the newspapers which have been so helpful in publishing news relating to the work of the county health departments throughout the State.

A statistical report for work of the year follows.

Respectfully submitted,

L. A. Riser, M. D., In Charge.

STATISTICAL REPORT FOR THE YEAR 1922.

Department of Rural Sanitation and County Health Work

South Carolina State Board of Health

Constructive Work.

Septic Tanks Installed	22
Pits installed	1,101
Buckets installed	1
Sewerage installed	12
Other types installed	0
Homes screened	425
Re-sanitations	37

Educational.

Lectures delivered	390
Attendance	22,276
Talks to school children	502
Children present	20,139
Clubs organized	6
Members enrolled	150
Literature distributed	33,357
Letters written (office)	8,617
Circular letters mailed	16,819
Homes visited by Director	2,091
Homes visited by Inspectors	8,736
Homes visited by Nurses and Social Workers	3,466
Total homes visited	14,293
Food Handlers inspected	664

Laboratory Work.

Examined for hookworm	2,635
Infected	461
Treated	400
Other laboratory work	263

Contagious and Infectious Diseases.

Contagious diseases investigated	570
Vaccinations (smallpox)	5,607
Typhoid cases investigated	95
Inocculations (typhoid)	18,448
Tuberculosis cases investigated	125
Other diseases investigated	135

Medical Examination.

Schools visited	313
Schools examined	210
Pupils examined	13,155
Pupils defective	6,951
Defects	7,499
Defects corrected	2,341

FREE CLINICS.

Tuberculosis Clinics.

Attendance	757
No. examined	587
Cases found positive	23

Tonsil and Adenoid Clinics.

Operated on for diseased tonsils	87
Operated on for diseased adenoids	87

Dental Clinics.

Children examined	1,769
Children teeth cleaned	1,769
Children teeth extracted	368
Amalgum fillings	287
Cement fillings	..

Child Welfare Clinics.

No. mothers present	..
No. children present	103
No. mothers instructed	97
No. children examined	..

Midwife Classes.

No. instructed	52

Venereal Disease.

Syphilis treated	218
Gonorrhea treated	230
Toxin Antitoxin	5,181
Pasteur treatment	403

ANNUAL REPORT SOUTH CAROLINA AND PALMETTO SANATORIA.

State Park, S. C., Dec. 1, 1922.

To the Chairman and Members of Executive Committee, South Carolina State Board of Health.

Gentlemen: Since January 1st, 124 white patients have received treatment at the South Carolina Sanatorium. Of these 58 were men and 66 were women. There are now 57 patients in the institution. Their physical condition is as follows: 3 minimal, 36 moderately advanced, 29 far advanced. Of those discharged 1 was minimal, 37 moderately advanced, 23 far advanced, 9 were apparently arrested, 7 quiescent, 30 improved, 9 not improved, 6 died.

The following tuberculous complications occurred:

Laryngitis, 3;

Hemorrhage, 10;

Ischiorectal abscess, 1.

Non-tuberculous complications were:

Syphilis, 4;

Chronic Starvation, 1;

Manic depressive psychosis, 1.

There were 68 patients treated at the Palmetto Sanatorium for negroes, 21 of whom are now resident. Of the latter, 8 are moderately advanced, 13 far advanced.

Those discharged were as follows: 1 non-tuberculous, 1 minimal, 10 moderately advanced; 33 far advanced, 1 not classified, 2 were apparently arrested, 1 quiescent, 8 improved, 11 not improved, 22 died.

The following were complications among the negroes: pleurisy with effusion, 1; tuberculous laryngitis, 4; tuberculous cervical adenitis, 1; syphilis, 1; manic depressive psychosis, 1.

The farm and dairy have furnished the institution with fresh vegetables, veal, pork, milk, beef and farm products valued at $5,618.03. The dairy herd has been improved greatly by the addition of registered Holsteins. The herd passed two tuberculin tests during the year without any reactions.

The electric line under construction last year has been completed, so that current from Columbia is available at all times.

An automatic telephone system has been installed, connecting all buildings of the institution. A 50,000 gallon water tank on a 100-foot steel tower, with a six-inch main, has been erected and an eight-inch well driven. This development has relieved our water shortage. A new septic tank with underground sewage disposal bed is being completed. Cement walks connecting the buildings of the South Carolina Sanatorium are being laid. All of the construction mentioned has been under the supervision of Mr. E. L. Filby, State Sanitary Engineer.

During the year a 26-bed building for white women was completed and made ready for occupancy October 1st. This building was furnished by contributions from public spirited citizens of the State.

A five room pavilion was opened at the Palmetto Sanatorium during the year to care for the acutely sick and moribund patients.

During the year the Superintendent and his assistant, Dr. J. C. Bonner, have assisted with clinics conducted by county health officers, or other health workers, at Ware Shoals, Edgefield, Johnston, Walhalla, Seneca, Walterboro, Adams Run, McClellanville, Mt. Pleasant, North Charleston, Greenwood, Laurens, Newberry, Whitmire, Pelzer, Honea Path, Belton, Easley, Conway and Loris.

With an elevated water tank the practicability of installing a sprinkler system for fire protection is accentuated. The need of a refrigerating plant increases with the growth of the institution. Other needs are, nurses' home, superintendent's home, servants' houses, amusement hall, another infirmary similar to the present one. The advisability of purchasing the Wilson tract of land is mentioned as it is needed for future growth and development of the two institutions.

Religious services have been held according to a schedule arranged by the Ministerial Union of Columbia and the Billy Sunday Club. Other church organizations have held services and furnished entertainment from time to time.

I wish to express my appreciation of the cooperation given by your committee and by the State Health Officer.

Respectfully submitted,

ERNEST COOPER, M. D., Supt.

REPORT OF FIELD SECRETARY.

The Field Agent's program for the year was planned under the following aims: 1. To locate and get under medical supervision or sanatorium care as many tuberculous patients as possible. 2. To follow up ex-sanitorium patients with the purpose of assisting them if condition were unfavorable. 3. To work for adequate sanatorium facilities by State and county. 4. To carry on a general program of education on the causes, treatment and prevention of tuberculosis.

As the most effective way of finding incipient and moderately advanced cases, a free clinic campaign was arranged in cooperation with the other departments of the State Board of Health, the South Carolina Tuberculosis Association, county medical societies and local women's clubs. With carefully laid plans, clinics were held for white and colored at eight points in five different counties having no organized health work. 825 examinations were made and 214 of those examined were diagnosed as actively or suspiciously tuberculous. Drs. Cooper and Bonner were the directing specialists. The field worker also instigated or assisted with clinics in five counties having nurses or tuberculosis secretaries paid in part or in full by Christmas Seal funds. At these clinics 592 were examined and 108 were diagnosed tuberculous. Reports from the four permanent clinics in the State show 1329 examinations, 463 cases.

Circular letters have been sent to doctors, officers of medical societies, county tuberculosis committees, health officers and nurses, club leaders and others, asking coooperation in the effort to locate suitable sanatorium patients.

Correspondence has been held concerning 80 patients, whose applications required special attention. Of these 25 were placed at State Park, 11 at county camps, 8 are still on the waiting list, 7 have died, and since the Sanatorium sends letters periodically to all ex-Sanatorium patients, only 30 personal contacts with these cases were made.

On account of the men on the waiting list for the sanatoria last summer, it was decided that we ask the legislature of 1923 for a building this year, so that accomodations for men and women would be the same. This was made one of the Health Planks in the Health Program of the State Federation of Women's

Clubs, was endorsed by their Legislative Committee, and presented at six district meetings. It was also brought before five State meetings of other organizations.

Dr. Henry Boswell, who is responsible for Mississippi's million dollar sanatorium, was secured as a speaker before the State Medical Association and his expenses raised.

Meetings in regard to hospitalization were held in two of the larger counties. Charleston Tuberculosis Committee has buildings equipped for a sanatorium but no maintenance fund assured. Two counties have planned meetings with a view to taking some action leading to local camps.

Feeling the necessity of having public health nurses and social workers in the counties planning any health move, the field worker devoted much of her time to assisting with plans to that end. She worked through the Tuberculosis Association with the help of Dr. Riser as campaign manager to promote the sale of Christmas seals. Over $16,000 was raised for tuberculosis work.

In connection with the clinic, sanatoria and seal sale program, about 18,000 pieces of educational literature were distributed, over 10,000 posters placed, programs provided for clubs and schools and many conferences held. The field worker herself made talks on 30 occasions to a total audience of 2,275, almost all of whom were leaders and representatives of different organizations. Ten of these were State meetings. Some of the reports from volunteer workers show tuberculosis talks made to about 2,000 people aside from school audiences. 225 newspaper articles are known to have been published. Films were shown to approximately 20,000 people. Exhibits were shown at the State Fair and at five county fairs. Two pieces of literature containing local data were printed and distributed throughout the State. As Secretary of the State Conference of Social Workers, the writer arranged special health and tuberculosis sessions at the annual meeting of that body.

Crippled by a lack of office help during the summer, the field work was limited. Work was done in 27 counties, involving 60 trips to 33 different places. A week was spent at the meeting of the National Tuberculosis Association. Monthly visits were made to State Park. Realizing the need for more diversion for the patients, an effort was made to enlist women's organizations

of Columbia in systematic plans for furnishing some form of entertainment every month of the year. Seven societies responded.

Collections amounting to $3,473.00 were made from individuals and from counties appropriating funds for the support of beds for indigent patients. $400.00 was raised to defray some of the clinic expenses.

The crying need of the State is for more tuberculosis education. For this we need more nurses and social workers who will lead in the establishment of free clinics and hospitals, and who will get clearly before the public the startling fact that tuberculosis, our greatest scourge, is simply the fruit of our ignorance.

CHAUNCEY BLACKBURN MCDONALD.

FOURTH ANNUAL REPORT—STATE SANITARY ENGINEER—1922.

To the Chairman and Members of the Executive Committee, South Carolina State Board of Health.

Gentlemen: A little less than four years ago, I commenced my work with the instructions to do what was needed and what was directed by the State Health Officer. To these general orders, I have added "and then some." Service, without consideration of self, has been cheerfully given to all. Service to the State has been rendered in an economical manner and it is submitted that South Carolina although paying the "lowest" salary of any State in the Union has received as efficient service as is rendered in any state with similar conditions. The undersigned has a multitude of duties and one weeks' schedule is submitted to show the type of work carried on. I left Columbia on the 5:10 a. m. train *Monday* morning arriving Rock Hill at 8.30 a. m. A sanitary survey of Winthrop College covering the following points was made during the day. (a) water supply; (b) sewerage and sewage disposal; (c) milk supply and handling; (d) food handling; (e) construction of buildings; (f) swimming pool sanitation; (g) laundry; (h) fire protection. *Tuesday* I left Rock Hill at 6:45 a. m. for Blacksburg and went over the water supply there with the mayor and local superintendent and also went over the question of cross connection of the polluted

cotton mill fire supply with the potable city supply. Went over the new plumbing installed in the school house with the mayor and member of the school board and health board. Begged a free ride to Gaffney and spent the afternoon there going over the water filtration plant with the local operator and city superintendent. Showed operator how to run orthotolidin test for free chlorine also alkalinity test. To Spartanburg on the 6:40 p. m. train. *Wednesday.* Investigated conditions in mill villages surrounding Spartanburg at request of superintendent of waterworks. Went over the water filtration plant and suggested the installation of the orthotolidin test by the plant operator. Was advised that the test would be instituted at once under the supervision of the plant's consulting chemist. Visited the Arcadia cotton mill sewage treatment plant at Fairforest and instructed mill superintendent as to proper operation of the tank and filter beds. Also "discovered" for the mill where all their mosquitoes were coming from and told them the remedy. To Greenville that night. *Thursday.* Left Greenville at 7 a. m. arrived Clemson College about 9. Conducted a similar survey as at Winthrop. To Seneca about 4 p. m. Investigated complaint at Seneca Cotton mill as to improper disposal of sewage from mill and some residences. Told superintendent how to correct conditions and received information that they would be corrected. Left Seneca about 9 p. m. Arrived Greenville 10:30 p. m. *Friday* left Greenville at 9 a. m. for Greer. Accompanied by local health officer, I went over the typhoid outbreak at Appalachia Cotton Mill—a few miles from Greer. Talked with the local superintendent of waterworks regarding the spring supply of the city. Returned to Spartanburg and saw local architect regarding sewage disposal at a rural school near city. Arrived Columbia at 11 p. m. *Saturday*—wrote up report of inspections and answered mail.

The foregoing indicates some of the varied problems met in the field. Assistance has been rendered the Factory Inspection Division of the Department of Agr. Ind. and Commerce along the lines of mill sanitation. Out at State Park the new water supply system and sewage treatment plant authorized at the last meeting of the Legislature has installed and the Sanatorium now has a 100-foot well, 8 to 6 inch diameter to augment the old supply. A 50,000 gallon tower provides about 40 pounds pressure and 6-inch pipe about the grounds provides some pro-

tection against fire. Hydrants and hose are located at convenient points. About a quarter of a mile of cement sidewalks are under construction and will be finished this year. These walks and the foregoing water supply and sewage treatment plant were constructed under the direction of the undersigned.

In the office whatever service the engineer could render to other departments of the State Board of Health was cheerfully given. Early this year the Legislative Investigating Committee request for a report on all financial accounts of the Board was complied with. The State inventory was taken the latter part of July and the budget worked up the last of September. This budget is printed in the report of the Budget Commission and attention is directed to the fact that this budget covers only bare necessities of the State Board of Health. Any "cuts" in the budget will be virtually "amputations." A small mineographed bulletin called "SEWAT" has been gotten out every month this year until funds were exhausted in October. This little bulletin has attracted attention in neighboring states and requests for copies have come from several states and engineers not directly connected with the operation of water plants and sewerage systems. This educational work was the first to be regularly carried on by the State Board of Health. It is to be regretted that it was interrupted by lack of funds on this budget item. I feel that one of the prime necessities of the State Board of Health is a regular monthly bulletin sent free to interested persons who do not know the wide field in which the State Board operates. The old adage of "a stitch in time" still holds good, and the prime method of preventing diease is education of the people exposed or subject to exposure.

Along the lines of water purification—a special piece of work gratifying to the State Sanitary Engineer and the State Board of Health—was the final installation of chlorine treatment of the city of Greenville's famous Paris Mountain water supply. This was recommended some two years ago but not adopted by the city until this summer. There are now some 17 cities giving their water final treatment with chlorine. When I first started there were as I recall some 4 or 5 installations in this state—these at cities where the army had encampments and required chlorination. Many of the towns now have dual apparatus in case of break down and the State Board of Health has an

emergency outfit donated by the manufacturers for use in epidemics, etc. Thus we can install chlorine treatment at any point in the state within 24 hours notice. Hypochlorite plants have been designed for some of the small cities where their finances could not stand the cost of liquid chlorine installation.

Swimming pools have been very popular during the past summer and the pools at Aiken and Rock Hill maintained by the cities have been inspected and operation suggested so as to prevent their becoming dangerous to the health of the bather. Out door ponds have been inspected from time to time but their maintenance in sanitary condition is practically impossible. The disposal of wastes from slaughter houses has also received some attention and the problem of obnoxious odors from their drying rooms has not been solved for the small plants we have in this State. The routine certification and inspection of water supplies used on the common carriers of the State, has been made for the Federal Government and many of the supplies given certificates.

The State Board of Health has adopted regulations relativte to Sewage Disposal—which will be found under the meetings of the Executive Committee. The carrying out of these regulations is one of my duties and will in time eliminate to some extent the numerous complaints as to improper sewage disposal which often result from improperly designed plants. It will also serve to safeguard the towns from waste of public funds by building plants for sewage treatment where none are necessary. The adoption by the Executive Committee of the Railway Sanitary Code has also put considerably more duties upon the engineer if it is to be fully carried out. At the last legislature an amendment to the present law regarding water analysis was passed so that now the State has some control over the supplies of industrial villages and can require inspection and analysis of their water supplies.

In conclusion—appreciation is expressed to those who have cooperated with me in the past and it is hoped that the future will see more effort, time, and money available to protect the quality and insure the quantity of the most necessary FOOD of the people of the State—and this food is water. We are doing what we can—more we would like to do but that rests upon the will of the Legislature—we are hammering away and little

by little getting salient facts home to the men in charge of our water supplies, etc., and thru them, to the vast population using their product, a little more protection of life and happiness.

Respectfully submitted,

E. L. Filby, C. E.

State Sanitary Engineer.

REPORT OF STATE HOTEL INSPECTOR.

To the Chairman and Executive Committee, South Carolina State Board of Health, Columbia, S. C.

Gentlemen: We submit the following as a partial report of the work of hotel inspection during the year 1922. The complete report will consist of this with the addition of the scores of the various hotels in the State. These scores will be complete by the first of January. There has been no variation from the work done last year, we have gone about over the State continuously from time to time making inspections, and investigating complaints as they come in. The income this year has not been as large as it was in previous years, due to two causes, first and foremost the last Legislature reduced the fees on small restaurants from ten dollars per year to two dollars and fifty cents. This has cut the income considerably. Secondly the financial depression of the country has caused a great many places to go out of business. However the income we believe will still be enough to run the office. Certainly for this year, for if we should fail to get in enough this year, we have a balance from previous years of around one thousand dollars. We find a great improvement in the sanitary conditions existing in our hotels, since our work started two years ago. All of our hotels are in pretty good shape with only a very few exceptions. Notably the hotels at Union and Westminster. The one at Union has given more trouble than any other in the State, and ought to be closed permanently, but the situation there is such that if we close it, the public will have no place to stop. We have put up with it thus far hoping to be able to get a new hotel built there, but we have recently given notice to the owners that we will not allow it to be run another year without a complete remodeling and renovating, which we believe will mean the closing up of the hotel. We find a general desire to cooperate on the part of the owners and mana-

gers of the hotels. We also have the hearty cooperation of the traveling public who at all times keep me posted on the conditions over the State and in that way give untold assistance to us in knowing where the violations are occurring.

Taking it as a whole the hotel situation of South Carolina from a sanitary standpoint is as good as any and a great deal better than the majority.

Respectfully submitted,

J. H. WOODWARD,
Hotel Inspector.

The lists attached hereto are the various hotels in South Carolina and the score of each for the year 1922.

A score of six hundred and under is unsatisfactory, and unless improvement is made the hotel will be considered unsanitary and shall be closed.

A score of from six hundred to seven hundred and fifty is considered only fair.

A score of from seven fifty to eight fifty is considered good.

A score of eight hundred and fifty and above is considered excellent.

These reports are released for publication January 7, 1923.

STATE HOTEL INSPECTOR.

Name of Hotel	Name of town of city	Score
Eureka	Abbeville	875
Chiquola	Anderson	950
Salla	Anderson	750
Terminal	Andrews	700
Palmer	Andrews	750
Aiken Inn	Aiken	840
Aiken	Aiken	840
Gildare	Allendale	840
Cleveland	Allendale	840
Diamond	Barnwell	900
Shamrock	Blackville	950
Mayflower Inn	Bamberg	910
Visitors House	Beaufort	940
River View	Beaufort	870
The Tucker Inn	Beaufort	925
Bethune	Bethune	740
Evason	Bennettsville	885
Big Springs	R. D. Bethune	900
Commercial	Batesburg	850
Batesburg	Batesburg	965
Belton	Belton	790
Pioneer	Bishopville	925
New Commercial	Bishopville	900
Grace	Conway	910
Kinston	Conway	875
Conway	Conway	750
Clinton	Clinton	875
New Clio	Clio	750
Jefferson	Columbia	985
Jerome	Columbia	950
Imperial	Columbia	950
Gresham	Columbia	975
St. John	Columbia	850
Colonia	Columbia	850
Marmac	Columbia	950
Central	Columbia	600
McLean	Columbia	750
Terminal	Columbia	600
Jackson	Columbia	750
Desoto	Columbia	980
The New Charleston	Charleston	975
St. John	Charleston	950
Argle	Charleston	940
Timrod Inn	Charleston	940
America	Charleston	940
Chappells	Chappells	750
Myers	Chester	880
Carolina Inn	Chester	900
Chester	Chester	800
Carlisle	Carlisle	750
Covington	Cheraw	930
Raynard	Cheraw	875
Camden	Camden	900
Commercial	Camden	900
Park View Inn	Camden	900
R. R. Hotel	Central	600
The Worsham Inn	Central	950
McFall	Darlington	985
Darlington	Darlington	750
Denmark	Denmark	920
Wheeler	Dillon	800
Due West	Due West	700
Berry	Elloree	800
New Dixie Highway	Edgefield	960
Mountain View	Easley	875
Estill	Estill	800
Fair Fax	Fairfax	845
New Hotel	Fairfax	900
Florence	Florence	900
Central	Florence	800
Pee Dee	Florence	875
Dickman House	Florence	900
Fountain Inn	Fountain Inn	750
Imperial	Greenville	955
Ottaray	Greenville	973
Todd	Greenville	600
Nokassa	Greenville	650
Wilson	Greenville	650
Piedmont	Greenville	600
Oregon	Greenwood	960

Name of Hotel	Name of town of city	Score
Greenwood	Greenwood	800
Travelers Hotel	Greenwood	750
Gladstone	Georgetown	850
Tourist	Georgetown	850
Dearborn Inn	Great Falls	930
Greer	Greer	550
Carroll	Gaffney	960
Mixon	Hampton	780
Holly Hill	Holly Hill	850
Travelers	Holly Hill	750
Arcade	Hartsville	900
Hatchett	Inman	800
Johnston Inn	Johnston	900
Enterprise	Jonesville	700
Benton	Kershaw	850
Royal	Lancaster	950
Kingstree	Kingstree	900
Palmetto	Kake View	925
Biltmore	Lake City	875
Drafts	Lexington	900
Laurens	Laurens	850
Baggott	Lanes	875
Lanes	Lanes	850
Lamar	Lamar	800
Imperial	Landrum	800
Youngs	Marion	900
Jenkins	Marion	725
Hampton	McBee	700
Kirkland	McColl	750
Valley View	Marietta	800
Vaughn	Mullins	930
Katurah	McCormack	840
McCormack	McCormack	800
Mayesville	Mayesville	850
National	Newberry	875
Newberry	Newberry	943
Nichols	Nichols	700
Kirkland	Norway	800
Orangeburg	Orangeburg	855
St. Joseph	Orangeburg	855
Pickens Inn	Pickens	850
Old Hickory Inn	Pickens	750
Wise	Prosperity	800
Antrim	Pelzer	800
Piedmont	Piedmont	800
Victor Inn	Pacolet	900
Pageland	Pageland	800
Blakeney	Pageland	800
Carolina	Rock Hill	825
Anderson Motor	Rock Hill	800
Ridgeway	Ridgeway	800
Sawyers	Ridge Springs	800
Cleveland	Spartanburg	980
Gresham	Spartanburg	975
Finch	Spartanburg	925
Spartan	Spartanburg	800
Clinchfield	Spartanburg	840
Piedmont	Spartanburg	675
Jackson	Spartanburg	600
Imperial	Sumter	900
Claremont	Sumter	900
Summerville Inn	Summerville	825
Squirrel Inn	Summerville	950
Oconee Inn	Seneca	800
Palmetto Inn	Seneca	775
Calhoun	St. Matthews	850
Hartzog	St. George	800
Saluda	Saluda	850
Timmonsville	Timmonsville	625
Union	Union	500
Edisto	Wagner	600
Alexander	Walhalla	900
Gilreath	Westminster	500
Whitmire	Whitmire	650
Williston	Williston	960
Albert	Walterboro	800
Ware Shoals	Ware Shoals	900
Shandon	York	850

TOURIST HOTELS

Name of Hotel	Name of town of city	Score
Highland Park	Aiken	975
Willcox's	Aiken	975
Palmetto Inn	Aiken	950
Big Springs	R. D. Bethune	900
Villa Margaruita	Charleston	975
Court Inn	Camden	975
Hobkirk Inn	Camden	950
The Kirkwood	Camden	975
Pine Forest Inn	Summerville	975
Carolina Inn	Summerville	975
Jordan Inn	R. D. Monetta	950

SUMMER RESORTS

Ceasars Head	Ceasars Head	900
Glenn Springs	Glenn Springs	800
Valley View	Marietta	800
Myrtle Beach	Myrtle Beach	800
Atlantic Beach	Sullivans Island	900

REPORT OF CHEMIST AND BACTERIOLIGIST.

Charleston, S. C., Dec. 30, 1922.

To the Chairman and Memebers of the Executive Committee of the State Board of Health.

Gentlemen: I have the honor to submit the following tabulated report of analysis of samples of water from the public water supplies of South Carolina, made under the direction of the State Board of Health, in accordance with the laws of South Carolina relating to the purity of the water supplies of towns and cities, I Code, Section 1599, and of information as to officials of local board of health and plants, source, capacity, treatment, daily consumption and consumption per capita, discharge of sewage and disposition of garbage.

Very respectfully,

FRANCIS L. PARKER, M. D.

Water Supply of Abbeville, S. C.

Abbeville Water & Electric Plant. Owned by city. Superintendent, C. P. Townsend, Jr. In charge of collection of samples, C. P. Townsend, Jr. Chairman of local Board, Dr. C. H. McMurray.
Source: Creek 1 1-3 miles from city. Capacity, 500,000 gallons per day; filtered by mechanical filter. Treatment, one-half grain alum per gallon. Capacity of plant, 500,000 gallons per day. Average consumption, 200,000 gallons per day. Consumption per capita, 40 gallons per day. Service metered. Sixty per cent of residences using city water supply. Sixty per cent of city sewered and have water closets. Sewerage empties into creek. No garbage disposal plant. Garbage dumped in old fields and gullies.

Sample Drawn.	Chlorine.	Free Ammonia.	Albuminoid Ammonia.	Nitrogen as Nitrites.	Nitrogen as Nitrates.	Total Solids.	Bacterial Indications of Contamination.	Chemical Indications of Contamination.
March 10, 1922	6.00	0.02	0.03	0.00	0.10	95.00	Negative	Negative
June 8, 1922	7.00	0.01	0.02	0.00	0.10	97.00	Negative	Negative
September 7, 1922	8.00	0.01	0.01	0.00	0.00	70.00	Negative	Negative
December 12, 1922	6.00	0.02	0.02	0.00	0.10	109.00	Negative	Negative

Water Supply of Aiken, S. C.

City Water Works. Superintendent, H. Sudlow. In charge of collection of samples, H. Busch. Chairman of Local Board of Health, Dr. H. T. Hall.
Source: Collection of Springs, 6 1-2 miles from city. Capacity, 2,000,000 gallons per day, not filtered. Capacity of plant, pumpage 1,500,000 gallons per day. Average consumption, 350,000 gallons per day. Consumption per capita, 80 gallons per day. One hundred per cent of city using city water supply. Sewerage system: Seventy five per cent of city sewered. 50 per cent of buildings connected with sewer and have water closets. Sand filter beds. Sewerage empties into small streams. No garbage disposal plant.

March 30, 1922	5.00	0.03	0.03	0.00	0.10	23.00	Negative	Negative
June 24, 1922	5.00	0.02	0.03	0.005	0.10	45.00	Negative	Negative
September 26, 1922	5.00	0.03	0.02	0.01	0.00	42.00	Negative	Negative
December 4, 1922	5.00	0.01	0.02	0.00	0.00	31.00	Negative	Negative

Water Supply of Allendale, S. C.

Allendale Light & Water Plant. Owned by town. Superintendent, J. W. Mallard. In charge of collection of samples, J. W. Mallard. Chairman of Local Board of Health, Dr. J. E. Warnock.

Source: Deep well, 752 feet deep, 8 inches in diameter, near the center of town; not filtered. Capacity, 240,000 gallons per day. Average consumption 60,000 gallons per day. Consumption per capita, 34 gallons per day. Sixty per cent of service metered. Eighty eight per cent of residences using city water supply. Fifty eight per cent of buildings connected with sewer and have water closets. Septic tank and sprinkling filter. Sewerage empties into Cosawhatchie River. No garbage disposal plant. Garbage dumped in open fields one and a half miles from city and burned.

March 14, 1922	7.00	0.01	0.03	0.00	0.00	145.00	Negative	Negative
June 7, 1922	8.00	0.03	0.04	0.00	0.00	125.00	Negative	Negative
September 9, 1922	6.00	0.01	0.01	0.00	0.00	149.00	Negative	Negative
December 11, 1922	7.00	0.02	0.02	0.00	0.00	185.00	Negative	Negative

Water Supply of Anderson, S. C.

Southern Public Utilities Co. Manager, H. A. Orr. In charge of collection of samples, R. L. Swittenberg. Chairman of Local Board of Health, Dr. J. O. Sanders.

Source: Bailey's Creek, two miles, and Rocky River three miles from city. Capacity 20,000,000 gallons per day. Filtered by mechanical filter. Treatment one-half grain of alum per gallon. Capacity of plant 2,500,000 gallons per day. Consumption per capita 50 gallons per day. Service metered. Ninety five per cent of buildings use city water supply. Sewerage system: Ninety three per cent of city sewered. No sewerage disposal plant. Sewerage empties into Rocky River and Generostee Creek.

March 14, 1922	5.00	0.02	0.02	0.00	0.10	60.00	Negative	Negative
June 10, 1922	5.00	0.02	0.02	0.00	0.20	57.00	Negative	Negative
September 5, 1922	6.00	0.01	0.01	0.00	0.10	59.00	Negative	Negative
December 7, 1922	5.00	0.01	0.01	0.00	0.10	74.00	Negative	Negative

Water Supply of Bamberg, S. C.

Light, Water and Power Plant. Owned by City. Under Board of Public Works Department. Superintendent, L. P. Tobin. In charge of collection of samples, L. P. Tobin. Chairman of Local Board of Health, Dr. H. J. Stuckey.

Source: Eight inch flowing well 480 feet deep, 4 inch flowing well 400 feet deep. 4 inch flowing well 400 feet deep. Reserve well can be called in for use 14 hours a day out of 24. 6 inch flowing well 500 feet deep. At present the 8 inch flowing well gives more water than can be used, therefore other wells are not being used. Capacity of plant 250,000 gallons per day and night (24 hrs.) Average consumption 75,000 gallons. Service ninety five per cent metered. Sewerage system: Seventy five per cent houses have septic tanks. No sewerage. Garbage disposed of by dump wagons.

April 20, 1922	5.00	0.02	0.02	0.00	0.00	43.00	Negative	Negative
June 21, 1922	6.00	0.02	0.03	0.00	0.10	80.00	Negative	Negative
November 4, 1922	6.00	0.01	0.02	0.00	0.00	91.00	Negative	Negative

Water Supply of Barnwell, S. C

Barnwell Light & Water Works, Owned by city. Superintendent, F. H. Miller In charge of collection of samples, F. H. Miller. Chairman of local Board, Charlie Brown.

Source: Four wells. Three 4½ inches and one 6 inches in diameter, 151 feet deep, in city. Capacity, 200,000 gallons per day. Not filtered. Capacity of plant, 72,000 gallons per day. Average consumption, 45,000 gallons per day. Consumption per capita, 30 gallons per day. Entire service metered. Fifty per cent of buildings using city water supply. Sewerage system: Ninety per cent of buildings have water closets. Ten per cent have septic tanks.

Sample Drawn.	Chlorine.	Free Ammonia.	Albuminoid Ammonia.	Nitrogen as Nitrites.	Nitrogen as Nitrates.	Total Solids.	Bacterial Indications. of Contamination.	Chemical Indications. of Contamination.
March 14, 1922	7.00	0.02	0.02	0.00	0.00	58.00	Negative	Negative
June 2, 1922	9.00	0.02	0.03	0.00	0.00	75.00	Negative	Negative
September 5, 1922	9.00	0.03	0.02	0.00	0.00	79.00	Negative	Negative
December 4, 1922	7.00	0.01	0.04	0.00	0.10	75.00	Negative	Negative

Water Supply of Batesburg, S. C.

Commission of Public Works. Owned by town. Superintendent, R. E. Hoover. In charge of collection of samples, R. E. Hoover. Chairman of local Board of Health, Dr. R. M. Timmerman.

Source: Three wells in city. Not filtered. Capacity 176,000 gallons per day. Service metered. Average consumption, 50,000 gallons per day. Consumption per capita, 2 gallons per day. One hundred per cent buildings using city water supply. Complete sewerage system. Ten per cent septic tanks. Two garbage disposal plants.

December 29, 1922	9.00	0.02	0.03	0.00	0.10	113.00	Negative	Negative
April 8, 1922	7.00	0.03	0.03	0.00	0.10	113.00	Negative	Negative
August 16, 1922	7.00	0.02	0.10	0.00	0.00	126.00	Negative	Negative
December 23, 1922	6.00	0.01	0.02	0.00	0.20	186.00	Negative	Negative

Water Supply of Beaufort, S. C.

City of Beaufort, S. C. Light & Water Department. Superintendent, J. W. Logan. In charge of collection of samples, John Collier. Chairman of Local Board of Health, Dr. C. M. Griffin.

Source: Well twelve inches in diameter and 125 feet deep, in center of city. Not filtered. Average consumption, 50,000 gallonss per day. Consumption per capita, 50 gallons per day. Service partly metered. Thirty per cent of buildings connected with city water supply. No sewerage system. Fifty per cent private sewers. Sewerage empties into Salt Water River. No garbage disposal plant. Garbage dumped at edge of city limits and burned.

March 20, 1922	33.00	0.04	0.06	0.00	0.00	215.00	Negative	Negative
June 30, 1922	30.00	0.03	0.02	0.05	0.00	201.00	Negative	Negative
September 25, 1922	35.00	0.01	0.03	0.01	0.00	277.00	Negative	Negative
December 14, 1922	37.00	0.03	0.02	0.00	0.00	229.00	Negative	Negative

Water Supply of Bennettsville, S. C.

Bennettsville Electric & Water Plant. Owned by city. Manager, E. C. Morrison. In charge of collection of samples, E. C. Morrison. Chairman of local Board of Health, Dr. O. A. Matthews.

Source: Eight wells, four and one-half inches in diameter, six 60 feet deep and two 40 feet deep . Pumped by steam or electric pumps. Average consumption, 275,000 gallons per day. Capacity of plant, 500,000 gallons per day. Consumption per capita, 70 gallons per day. All services except public services metered. Ninety-five per cent buildings in business and residence section and sixty per cent buildings in corporate limits using city water supply. Sewerage System: Eighty-seven per cent of buildings in residence and business section and 55 per cent buildings in city limits connected with sewer and have water closets. Septic tank. Sewerage empties into Crooked Creek one and a half miles from city. No garbage disposal plant.

March 20, 1922	25.00	0.04	0.04	0.00	0.50	63.00	Negative	Negative
June 5, 1922	26.00	0.02	0.04	0.00	0.50	97.00	Negative	Negative
September 14, 1922	30.00	0.01	0.01	0.00	0.50	116.00	Negative	Negative
December 12, 1922	30.00	0.02	0.02	0.001	0.50	130.00	Negative	Negative

Water Supply of Camden, S. C.

City of Camden Water & Light Plant. Superintendent, W. B. Allred. In charge of collection of samples, John W. Wilson and W. B. Allred. Chairman of local Board of Health, C. W. Billings.

Source: Spring fed creek, one mile from city limits. Capacity, 7,200,000 gallons per day. Filtered by gravity sand filters. Treatment, one and a fourth grains alum per gallon, 1.29 grains soda ash per gallon. Capacity of plant, 575,000 gallons per day. Eighty-one per cent of buildings connected with and using city water supply. Sewerage system: Fifty-four per cent of buildings connected with sewerage system and have water closets. Sewerage empties into Wateree River. No garbage disposal plant. Garbage emptied on outskirts of town and partly burned.

March 17, 1922	6.00	0.03	0.03	0.00	0.00	62.00	Negative	Negative
June 6, 1922	6.00	0.02	0.04	0.001	0.00	75.00	Negative	Negative
September 5, 1922	7.00	0.02	0.02	0.00	0.00	31.00	Negative	Negative
December 4, 1922	5.00	0.02	0.02	0.00	0.10	56.00	Negative	Negative

Water Supply of Charleston, S. C.

City Water Department, Commission of Public Works. Manager and Engineer, James E. Gibson. In charge of collection of samples, Dr. F. L. Parker. Chairman of local Board of Health, J. A. Ball.

Source: Goose Creek, 12 miles from city. This is an impounded supply, the reservoir being an old tide water basin dammed off from tidal sea water. Area of flooded reservoir 2,100 acres. Capacity, 2,700,000,000 gallons which would supply 8,000,000 gallons per day. Filtered by mechanical filter. Treatment, sulphate of alumina, caustic soda and liquid chlorine. Capacity of plant, pumping 15,000,000 gallons, filters, 14,000,000 gallons. Average consumption, 6,500,000 gallons per day. Consumption per capita, 85 gallons per day. Service 100 per cent metered. Supplementary supply, Ashley River, Bacon's Bridge, drainage area 231 square miles. Available supply as at present developed, 2,000,000 gallons. Sewerage system: Sewerage empties into Charleston Harbor. Garbage disposal plant, incinerator.

Sample Drawn.	Chlorine.	Free Ammonia.	Albuminoid Ammonia.	Nitrogen as Nitrites.	Nitrogen as Nitrates.	Total Solids.	Bacterial Indications. of Contamination.	Chemical Indications. of Contamination.
March 11, 1922	18.00	0.03	0.15	0.00	0.00	91.00	Negative	Negative
June 15, 1922	16.00	0.02	0.10	0.00	0.10	85.00	Negative	Negative
September 8, 1922	11.00	0.02	0.10	0.00	0.00	69.00	Negative	Negative
December 13, 1922	19.00	0.01	0.05	0.00	0.10	61.00	Negative	Negative

Water Supply of Cheraw, S. C.

Cheraw Water Works. Owned by City of Cheraw. Superintendent, J. D. Smith. In charge of collection of samples, D. L. Tillman, City Clerk. Chairman of local Board of Health, Robt. L. Chapman.

Source: Pee Dee river, one-half mile from city. Capacity, 750,000 gallons per day. Service metered. Twenty-five percent of buildings using city water supply. Sewerage system: Eighty percent of city sewered. Twenty per cent of buildings connected with sewer and have water closets. Sewerage empties into Pee Dee River. No garbage disposal plant, garbage hauled away or buried.

June 7, 1922	7.00	0.02	0.03	0.00	0.10	105.00	Negative	Negative
November 28, 1922	6.00	0.02	0.02	0.00	0.10	63.00	Negative	Negative

Water Supply of Chester, S. C.

Chester Water Works. Owned by city. Superintendent, J. H. McLure. In charge of collection of samples, J. H. McLure. Chairman of local Board of Health, J. M. Wise.

Source: River three miles from city. Capacity, 1,200,000 gallons per day. Filtered by mechanical filter. Treatment, 2 grains alum per gallon. Water chlorinated. Capacity of plant, 720,000 gallons per day. Average consumption, 500,000 gallons per day. Consumption per capita, 60 gallons per day. Service metered. Eighty-five per cent of buildings using city water supply. Sewerage system: Eighty-five per cent of city sewered and have water closets. No sewerage disposal plant. Sewerage empties into Tan Yard Branch. Incinerator installed for disposal of garbage.

March 10, 1922	7.00	0.01	0.03	0.00	0.10	115.00	Negative	Negative
June 6, 1922	6.00	0.02	0.03	0.00	0.10	93.00	Negative	Negative
September 6, 1922	9.00	0.02	0.03	0.00	0.00	100.00	Negative	Negative
December 8, 1922	10.00	0.02	0.02	0.00	0.10	91.00	Negative	Negative

Water Supply of Clinton, S. C.

Municipal Water and Light Plant. Superintendent, Guy E. Tumblin. In charge of collection of samples, Guy. E. Tumblin. Chairman of local Board of Health, Dr. T. L. W. Bailey.

Source: Wells, one 10 inches and three 8 inches in diameter and 500 feet deep, in city. Capacity, 180,000 gallons per day; not filtered. Average consumption, 160,000 gallons per day. Consumption per capita, 35 gallons per day. Service metered. Eighty per cent of buildings unsing city water supply. Sewerage system: Seventy-five per cent of buildings connected with sewer and have water closets. Septic tanks. Sewerage empties into two streams. No garbage disposal plant. Garbage dumped outside of city limits.

March 17, 1922	13.00	0.02	0.03	0.00	0.30	205.00	Negative	Negative
June 22, 1922	13.00	0.03	0.04	0.005	0.30	193.00	Negative	Negative
September 18, 1922	13.00	0.02	0.02	0.005	0.30	249.00	Negative	Negative
December 5, 1922	13.00	0.01	0.01	0.00	0.30	151.00	Negative	Negative

Water Supply of Columbia, S. C.

Water Department, City of Columbia. City Engineer, W. S. Tomlinson. In charge of collection of samples, C. H. White for water works and Dr. Jean LaBorde. Local Health Officer, Dr. Jean LaBorde.

Source: Congaree River. Capacity practically unlimited. Filtered by rapid sand filters. Capacity of plant, 13,000,000 gallons per day. Treatment, one grain of alum per gallon. Average consumption, 6,500,000 gallons per day. Service metered. Ninety-nine per cent of buildings using city water supply. Sewerage system. Eighty-five per cent of buildings connected with city sewer and have water closets. Sewerage empties into Congaree River. Garbage is being dumped in out of the way places and covered with earth at present, and two disposal plants are now in operation.

March 10, 1922	6.00	0.03	0.03	0.00	0.10	55.00	Negative	Negative
June 5, 1922	8.00	0.03	0.03	0.00	0.10	40.00	Negative	Negative
September 5, 1922	5.00	0.02	0.02	0.00	0.10	47.00	Negative	Negative
December 4, 1922	7.00	0.02	0.02	0.00	0.00	57.00	Negative	Negative

Water Supply of Darlington, S. C.

Palmetto Light & Power Co. Superintendent, T. Miller White. In charge of collection of samples, T. Miller White. Chairman of local Board of Health, Dr. J. T. Coggeshall.

Source: Wells, diameter 8 inches. Depth, 335 feet. Diameter, 6 inches, depth 574 feet. Diameter, 6 inches, depth, 200 feet, and diameter 10 inches, depth, 317 feet, in city. Capacity, 650,000 gallons per day. Capacity of plant, 650,000 gallons per day. Average consumption, 200,000 gallons per day. Consumption per capita, 45 gallons per day. Service metered. One hundred per cent of buildings using city water supply. Sewerage system: Almost all of town is sewered. Seventy-five per cent of buildings connected with sewer and have water closets.

Sample Drawn.	Chlorine.	Free Ammonia.	Albuminoid Ammonia.	Nitrogen as Nitrites.	Nitrogen as Nitrates.	Total Solids.	Bacterial Indications of Contamination.	Chemical Indications of Contamination.
March 10, 1922	4.00	0.02	0.02	0.00	0.00	42.00	Negative	Negative
June 5, 1922	6.00	0.02	0.02	0.00	0.00	75.00	Negative	Negative
September 5, 1922	6.00	0.03	0.03	0.00	0.00	29.00	Negative	Negative
December 4, 1922	4.00	0.02	0.04	0.00	0.10	45.00	Negative	Negative

Water Supply of Dillon, S. C.

Dillon Water Works Plant. Owned by city. Secretary and Treasurer, Mrs. Jennie Watson. J. W. Lovejoy, Superintendent and in charge of collection of samples. Chairman of local Board of Health, Dr. L. F. Johnson.

Source: Twenty shallow wells 30 feet deep (at present are boring wells below 200 feet). Capacity, 288,000 gallons per day. Filtered through sand. Treatment, soda ash and alum. Capacity of plant, 130,000 gallons per day. Average consumption, 75,000 gallons per day. Consumption per capita, 30 gallons per day. Service metered. Seventy-five per cent of buildings using city water supply. Sewerage system: Seventy-five per cent of city connected with sewerage system, fifty per cent of city buildings have water closets. Septic tank. Sewerage empties into Pee Dee River. No garbage disposal plant. Garbage dumped in low and suitable places.

March 29, 1922	10.00	0.03	0.04	0.00	0.50	83.00	Negative	Negative
July 11, 1922	9.00	0.02	0.01	0.00	0.30	77.00	Negative	Negative
September 14, 1922	9.00	0.03	0.02	0.00	0.30	65.00	Negative	Negative
December 4, 1922	10.00	0.01	0.02	0.00	0.20	53.00	Negative	Negative

Water Supply of Easley, S. C.

City Water and Light Plant. Owned by City. Superintendent, T. M. Rogers. In charge of collection of samples, T. M. Rogers. Chairman of local Board of Health, Dr. J. C. Walker.

Source: Wells and creek. Wells, diameter, 2 inches; depth, average, 30 feet, pumped. Distance from city, three-quarters of a mile. Creek one mile from city. Capacity, 1,000,000 gallons per day. Creek water filtered by gravity filter. Treatment, lime and sulphate of alumina. Average consumption, 125,000 gallons per day. Consumption per capita, 17 gallons per day. Service metered. Eighty per cent of buildings using city water supply. Six miles of sewerage system. Septic tank. No garbage disposal plant. Garbage dumped into large ditch.

March 17, 1922	5.00	0.03	0.03	0.00	0.20	49.00	Negative	Negative
June 5, 1922	5.00	0.02	0.02	0.00	0.20	93.00	Negative	Negative
September 5, 1922	5.00	0.03	0.06	0.00	0.20	86.00	Negative	Negative
December 4, 1922	5.00	0.02	0.02	0.00	0.10	99.00	Negative	Negative

Water Supply of Florence, S. C.

City of Florence Water Department. Owned by city. Superintendent, D. L. Husbands. In charge of collection of samples, Dr. P. H. Brigham. Health officer, Dr. P. H. Brigham.

Source: Three wells, capacity 1,000,000 gallons per day. Not filtered. Average consumption, 600,000 gallons per day. Consumption per capita, 91 gallons per day. Service metered. Ninety per cent of buildings using city water supply. Sewerage System: Sixty per cent of city sewered. Forty per cent connected with sewer and have water closets. Sewerage disposal plant. Sewerage empties into Jeffries Creek. Nye odorless incinerator, ten ton capacity, located on outskirts of city.

March 14, 1922	35.00	0.02	0.04	0.00	0.00	211.00	Negative	Negative
June 7, 1922	15.00	0.02	0.03	0.00	0.00	85.00	Negative	Negative
September 7, 1922	31.00	0.02	0.02	0.00	0.00	170.00	Negative	Negative
Deecmber 8, 1922	33.00	0.02	0.02	0.00	0.10	154.00	Negative	Negative

Water Supply of Gaffney, S. C.

Board of Public Works. Owned by city. Superintendent, L. V. Gaffney. In charge of collection of samples, L. V. Gaffney. Chairman of local Board of Health, J. C. Creech.

Source: Cherokee Creek, 3½ miles from city. Filtered by gravity filter. Treatment, one grain of alum per gallon. Capacity of plant, 1,000,000 gallons per day. Average consumption, 200,000 gallons per day. Consumption per capita, 25 gallons per day. Service metered. Seventy-five per cent of buildings using city water supply. Sewerage system: Forty per cent of buildings connected with sewer and have water closets. Sewerage disposal plant. Sewerage empties into branch. Garbage disposal plant, incinerator. Septic tank.

March 17, 1922	5.00	0.04	0.04	0.00	0.10	70.00	Negative	Negative
June 5, 1922	6.00	0.03	0.02	0.00	0.10	60.00	Negative	Negative
September 5, 1922	7.00	0.03	0.02	0.00	0.10	82.00	Negative	Negative
December 7, 1922	3.00	0.01	0.01	0.00	0.10	81.00	Negative	Negative

Water Supply of Georgetown, S. C.

Black River Water Co. G. S. Clarke, president. In charge of collection of samples, Dr. H. L. Wright. Chairman of local Board of Health, Dr. W. W. Gaillard.

Source: Black River, 75 miles from city by river, 15 miles by air line. Capacity, 1,000,00 gallons per day. Filtered by slow sand filter. No treatment. Capacity of plant, 1,000,000 gallons per day. Average consumption, 177,000 gallons per day. Consumption per capita, 75 gallons per day. Service metered. Sewerage system: Sixty per cent of city sewered. Sewerage empties into Sampit River. No garbage disposal plant. Garbage dumped in low places on abandoned rice fields.

Sample Drawn.	Chlorine.	Free Ammonia.	Albuminoid Ammonia.	Nitrogen as Nitrites.	Nitrogen as Nitrates.	Total Solids.	Bacterial Indications. of Contamination.	Chemical Indications. of Contamination.
March 10, 1922	12.00	0.01	0.15	0.00	0.10	60.00	Negative	Negative
June 5, 1922	10.00	0.03	0.10	0.00	0.30	70.00	Negative	Negative
September 5, 1922	11.00	0.02	0.10	0.00	0.20	69.00	Negative	Negative
December 7, 1922	9.00	0.02	0.25	0.00	0.10	111.00	Negative	Negative

Water Supply of Graniteville, S. C.

Graniteville Manufacturing Co. Superintendent, G. H. Leitner. In charge of collection of samples, S. F. Delvin.

Source: Spring, one mile from town; not filtered. Capacity, 40,000 gallons per day. Average consumption, 22,000 gallons per day. Consumption per capita, 20 gallons per day. Service not metered. Fifty-two per cent of buildings using city water supply. Sewerage system: Ten per cent of city sewered. Two per cent of buildings connected with sewer. Sewerage empties into Horse Creek. No garbage disposal plant. Garbage dumped outside of town limits.

March 17, 1922	5.00	0.03	0.05	0.00	0.00	15.00	Negative	Negative
June 7, 1922	7.00	0.02	0.03	0.00	0.10	10.00	Negative	Negative
September 5, 1922	5.00	0.06	0.06	0.00	0.10	34.00	Negative	Negative
December 7, 1922	4.00	0.01	0.02	0.00	0.10	70.00	Negative	Negative

Water Supply of Greenville, S. C.

Greenville City Water Works. Superintendent, H. W. Perry. In charge of collection of samples, H. W. Perry. Chairman of local Board of Health, Dr. Davis Furman.

Source: Streams in Paris Mountain to reservoirs, 8 and 12 miles from city; gravity system. Capacity, 5,000,000 gallons per day. Not filtered. Average consumption, 2,000,000 gallons per day. Consumption per capita, 50 gallons per day. Service metered. Ninety-eight per cent of buildings using city water supply. Additional source run only during dry season. Pump station on Enoree River. 3,000,000 gallons daily capacity. Filtered and chlorinated when used. Sewerage system: Seventy-five per cent of city sewered and have water closets. Sewerage empties into Reedy River. Garbage disposal plant. Garbage dumped at crematory and burned.

March 10, 1922	4.00	0.02	0.02	0.00	0.00	50.00	Negative	Negative
June 7, 1922	5.00	0.02	0.02	0.00	0.00	87.00	Negative	Negative
September 5, 1922	5.00	0.01	0.02	0.00	0.10	50.00	Negative	Negative
December 5, 1922	4.00	0.01	0.02	0.00	0.10	36.00	Negative	Negative

Water Supply of Greenwood, S. C.

Greenwood Water and Electric Plant. Owned by city. Superintendent, A. J. Sproles. In charge of collection of samples, A. J. Sproles. Chairman of local Board of Health, G. H. Blake.

Source: Nine deep wells. Capacity, 700,000; additional water supply, 750,000 gallons per day, filtered. Average consumption, 500,000 gallons per day. Consumption per capita, 40 gallons per day. Service metered 90 per cent. Seventy-five per cent of buildings using city water supply. Sewerage system: Eighty per cent of city sewered. Treatment, septic tank on to sand and gravel. No garbage disposal plant. Garbage dumped on vacant lots.

March 20, 1922	6.00	0.03	0.04	0.00	0.10	170.00	Negative	Negative
June 3, 1922	7.00	0.02	0.03	0.00	0.10	212.00	Negative	Negative
September 5, 1922	8.00	0.02	0.02	0.001	0.00	172.00	Negative	Negative
December 7, 1922	7.00	0.02	0.02	0.00	0.10	190.00	Negative	Negative

Water Supply of Greer, S. C.

Commission of Public Works. Owned by city. Superintendent, E. M. Anderson. In charge of collection of samples, E. M. Anderson. Chairman of local Board of Health, Dr. T. O. Walker.

Source: Four wells in city. Capacity, 230,000 gallons per day. Not filtered. Average consumption, 100,000 gallons per day. Service metered. Thirty two per cent of buildings using city water supply. Sewerage system: Thirty per cent of buildings connected with sewer and have water closets. Sewerage empties into branch. No garbage disposal plant. Garbage dumped into fields outside of city limits.

June 30, 1922	6.00	0.03	0.02	0.00	0.20	25.00	Negative	Negative
September 28, 1922	5.00	0.02	0.01	0.00	0.30	70.00	Negative	Negaitve
Deccember 4, 1922	5.00	0.01	0.02	0.00	0.20	64.00	Negative	Negative

Water Supply of Hartsville, S. C.

Board of Commission of Public Works. Owned by city. Superintendent, W. H. Garland. In charge of collection of samples, W. H. Garland. Chairman of local Board of Health, D. R. Coker.

Source: Three wells, 3½ inches in diameter, 287 feet deep, 4 inches in diameter, 252 feet deep; 6 inches in diameter, 260 feet deep. Pumped. Capacity, 600,000 gallons per day. Not filtered. Average consumption 200,000 gallons per day. Consumption per capita, 60 gallons per day. Service metered. Sewerage system: Sixty-five per cent of city sewered. Sewerage empties into Black Creek. Garbage disposal plant. Garbage burned. Fifteen per cent new water and sewer being installed.

Sample Drawn.	Chlorine.	Free Ammonia.	Albuminoid Ammonia.	Nitrogen as Nitrites.	Nitrogen as Nitrates.	Total Solids.	Bacterial Indications of Contamination.	Chemical Indications of Contamination.
March 2, 1922	5.00	0.03	0.03	0.00	0.00	44.00	Negative	Negative
June 10, 1922	5.00	0.03	0.03	0.00	0.00	20.00	Negative	Negative
September 5, 1922	6.00	0.01	0.01	0.00	0.00	25.00	Negative	Negative
December 5, 1922	4.00	0.01	0.02	0.00	0.00	22.00	Negative	Negative

Water Supply of Kingstree, S. C.

Kingstree Water Works. Owned by city. Superintendent, S. C. Anderson. In charge of collection of samples, S. C. Anderson. Chairman of local Board of Health, T. M. McCutchen.

Source: Two wells one half mile from city. Three and one-half inches in diameter; 287 feet deep. Pumped. Capacity, 237,600 gallons per day. Not filtered. Capacity of plant, 237,600 gallons per day. Average consumption, 175,0000 gallons per day. Consumption per capita, 60 gallons per day. Service metered. Forty per cent of buildings using city water supply. Have made extension of 13,000 feet of 4 inch water main. Sewerage system. Eighty per cent of city sewered. Forty per cent of buildings connected with sewer and have water closets. Sewerage disposal plant. Sewerage treated with kerosene and salt. Sewerage empties into Black Creek. Have extended 8 inch sewer main about 13,000 feet. No garbage disposal plant. Garbage dumped outside of city and burned.

March 14, 1922	5.00	0.03	0.03	0.00	0.00	333.00	Negative	Negative
June 8, 1922	9.00	0.02	0.02	0.001	0.00	240.00	Negative	Negative
September 5, 1922	8.00	0.04	0.03	0.10	0.00	233.00	Negative	Negative
December 7, 1922	7.00	0.03	0.06	0.00	0.00	309.00	Negative	Negative

Water Supply of Lancaster, S. C.

Commission of Public Works. Owned by city. Superintendent, R. S. Harper. In charge of collection of samples, Dr. W. F. Laing. Chairman of Local Board of Health, W. R. Thompson.

Source: Two creeks, one and one-half miles from city. Capacity, 1,000,000 gallons per day. Filtered by mechanical filter. Treatment, 1 grain alum per gallon. Capacity of plant, 720,000 gallons per day. Average consumption, 300,000 gallons per day. Consumption per capita, 20 gallons per day. Sewerage system: Seventy percent of city sewered and have water closets. Seventy-five percent of the buildings using city water supply. Service metered. Sewerage empties into Little River. No garbage disposal plant. Garbage dumped outside city limits and treated with lime when necessary.

March 10, 1922	9.00	0.02	0.04	0.00	0.10	126.00	Negative	Negative
June 5, 1922	11.00	0.02	0.03	0.00	0.00	101.00	Negative	Negative
September 6, 1922	12.00	0.01	0.02	0.00	0.00	77.00	Negative	Negative
December 4, 1922	11.00	0.02	0.01	0.00	0.00	100.00	Negative	Negative

Water Supply of Laurens, S. C.

Municipal Light & Power Plant. Superintendent, F. W. Chapman. In charge of collection of samples, F. W. Chapman. Chairman of local Board of Health, Dr. W. D. Ferguson.

Source: Creek within city limits; filtered by mechanical filter. Treatment 1 1-3 grains alum per gallon. Capacity of plant, 250,000 gallons per day. (Contract for 1,000,000 gallon plant let Nov. 2, to be completed in six months. Supply Reedy Fork Creek. Rapid sand filters (2). Covered clear well of 525,000 gallons. Present demand, 225,000 gallons.) Consumption per capita 45 gallons per day. Service metered. Ninety percent of buildings using city water supply. Water chlorinated. Sewerage system. Seventy-five percent of buildings connected with sewer and have water closets. Sewerage empties into Little River. No garbage disposal plant. Garbage dumped outside city limits and treated with lime when necessary.

March 14, 1922	6.00	0.02	0.04	0.00	0.10	154.00	Negative	Negative
July 16, 1922	6.00	0.03	0.03	0.00	0.20	99.00	Negative	Negative
September 5, 1922	7.00	0.02	0.02	0.00	0.10	104.00	Negative	Negative
December 15, 1922	5.00	0.01	0.03	0.00	0.10	80.00	Negative	Negative

Water Supply of Liberty, S. C.

Commission of Public Works. Owned by City of Liberty. Superintendent, C. R. Smith. In charge of collection of samples, C. R. Smith.

Source: Small stream one mile from city. Capacity, 30,000 gallons per day. Service metered. Twenty percent of city buildings using city water supply, Sewerage system: none. No garbage disposal plant. Garbage hauled out of city.

August 3, 1922	6.00	0.01	0.02	0.00	0.30	79.00	Negative	Negative
November 3, 1922	5.00	0.02	0.01	0.00	0.20	53.00	Negative	Negative

Water Supply of Manning, S. C.

Manning Water Works. Owned by city. Superintendent, F. P. Ervin. In charge of collection of samples, F. P. Ervin.
Source: Artesian well, 6 inches in diameter, 485 feet deep. 480 feet deep, cased. Not filtered. Capacity of well, natural flow, 37 gallons per minute. Capacity of well with Compressor working, 200 gallons per minute. Storage facilities: Concrete reservoir holding 245,000 gallons, Elevated tank holding 100,000 gallons. Average consumption daily, 75,000 gallons. Service metered. Eighty percent of buildings using city water supply. Sewerage system: Seventy-five percent of city sewered. Thirty-eight percent with water closets. Sewerage empties into Black River Swamp. No garbage disposal plant.

Sample Drawn.	Chlorine.	Free Ammonia.	Albuminoid Ammonia.	Nitrogen as Nitrites.	Nitrogen as Nitrates.	Total Solids.	Bacterial Indications of Contamination.	Chemical Indications of Contamination.
June 5, 1922	7.00	0.04	0.03	0.005	0.00	292.00	Negative	Negative

Water Supply of Marion, S. C.

Palmetto Power and Light Co. Vice President and General Manager, P. A. Tillery, Raleigh, N. C. In charge of collection of samples T. D. Ector, Div. Superintendent. Chairman of local Board of Health, Dr. C. S. Howell.
Source: Wells, diameter 8 and 6 inches; depths, 100 and 169 feet. In city. Capacity, 175,000 gallons per day; not filtered. Capacity of plant, 175,000 gallons per day. Average consumption 100,000 gallons per day. Consumption per capita, 25 gallons per day. Service metered. About 75 per cent of buildings using city water supply. Sewerage system: Entire city sewered. Forty percent of buildings connected with sewer and have water closets. Septic tank. Sewerage empties into Catfish Creek. Garbage dumped on "Dump Grounds," outside of city and set on fire. No garbage disposal plant.

March 10, 1922	6.00	0.03	0.03	0.00	0.00	175.00	Negative	Negative
June 6, 1922	9.00	0.02	0.03	0.002	0.00	290.00	Negative	Negative
September 5, 1922	8.00	0.04	0.02	0.005	0.00	160.00	Negative	Negative
December 5, 1922	8.00	0.01	0.01	0.00	0.10	145.00	Negative	Negative

Water Supply of McColl, S. C.

Municipal Water Plant, McColl, S. C. Superintendent, Chief of Police W. F. Carpenter. In charge of collection of samples, W. F. Carpenter. Chairman of local Board of Health, J. C. Moore, M. D.

Source: Three wells, 100 feet deep, 6 inches in diameter, pumped, within city. Capacity, 300,000 gallons per day of 24 hours. Not filtered. Average consumption about 100,000 gallons. Service metered. Ninety percent of buildings using city water supply. Sewerage system: Entire city sewered. Eighty-five percent of buildings have water closets. Sewer empties into Painter Creek. Sewerage disposal plant. No garbage disposal plant. Garbage hauled outside of city limits.

March 20, 1922	6.00	0.02	0.03	0.00	0.50	42.00	Negative	Negative
June 19, 1022	8.00	0.03	0.03	0.00	0.30	45.00	Negative	Negative
September 9, 1922	8.00	0.02	0.03	0.00	0.30	39.00	Negative	Negative

Water Supply of Mullins, S. C.

Board of Public Works. Owned by town of Millins. Superintendent G. M. Brown. In charge of collection of samples G. M. Brown. Chairman of local Board of Health, Dr. J. H. Smith.

Source: Deep well, 10 inches in diameter and 350 feet deep, in city. Capacity, 125,000 gallons per day. Capacity of plant, 125,000 gallons per day. Average consumption, 75,000 gallons per day. Service metered. Ninety-nine percent of buildings using city water supply. Sewerage system: Fifty percent septic tanks 4-10 of 1 percent. Seventy-five percent of city sewered. Forty percent of buildings are connected with sewer and have water closets. Sewerage empties into open stream, White Oak. No garbage disposal plant. Garbage dumped outside of city limits.

March 10, 1922	11.00	0.02	0.03	0.00	0.00	207.00	Negative	Negative
June 13, 1922	10.00	0.02	0.02	0.00	0.00	195.00	Negative	Negative
September 23, 1922	11.00	0.02	0.02	0.00	0.00	304.00	Negative	Negative
December 5, 1922	10.00	0.02	0.02	0.00	0.10	159.00	Negative	Negative

Water Supply of Newberry, S. C.

Commission of Public Works. Owned by city. Superintendent, H. W. Schumpert. In charge of collection of samples, Dr. R. L. Mayes. Chairman of local Board of Health, Dr. R. L. Mayes.

Source: Wells, 8 inches in diameter, 300 feet deep; 8 inches in diameter, 300 feet deep; 10 inches in diameter, 300.5 feet deep; 10 inches in diameter, 350 feet deep. Pumped by air and also by Pomona No. 18, and No. 10 deep well pumps, in city limits. Capacity, 360,000 gallons per day; not filtered. Average consumption, 200,000 gallons per day. Consumption per capita, 23 gallons per day. Service metered. Ninety-five percent of buildings using city water supply. Sewerage system: Seventy-five percent connected with sewer. No connections in tenement houses in cotton mill district. Using a "Pot Dry Closets" sewerage disposal plant. Septic tank and filter. Sewerage empties into Scott's Creek. Incinerator is installed for disposal of garbage.

March 7, 1922	32.00	0.04	0.04	0.00	0.50	265.00	Negative	Negative
June 2, 1922	36.00	0.02	0.02	0.00	0.50	316.00	Negative	Negative
September 5, 1922	33.00	0.05	0.03	0.00	0.50	300.00	Negative	Negative
December 5, 1922	35.00	0.01	0.01	0.00	0.20	355.00	Negative	Negative

Water Supply of North Augusta, S. C.

North Augusta Works. Owned by town. W. E. Mealing, Chairman of Public Service Commission. In charge of collection of samples, W. E. Mealing. Chairman of local Board of Health, W. E. Mealing.
Source: Springs forming lake in city, not filtered. Chlorination plant has been installed. Treatment 1.50 pounds hypochlorite of lime to 1,500,000 gallons. Capacity of plant, 330,000 gallons per day. Capacity of supply, 400,000 gallons per day. Average consumption, 250,000 gallons per day. Service not metered. Sewerage system: Eighty percent of city sewered. Sewerage empties into Savannah River. No garbage disposal plant. Garbage dumped outside of town.

Sample Drawn.	Chlorine.	Free Ammonia.	Albuminoid Ammonia.	Nitrogen as Nitrites.	Nitrogen as Nitrates.	Total Solids.	Bacterial Indications of Contamination.	Chemical Indications of Contamination.
March 31, 1922	11.00	0.03	0.04	0.00	0.50	94.00	Negative	Negative
June 5, 1922	11.00	0.02	0.04	0.00	0.50	120.00	Negative	Negative
September 20, 1922	11.00	0.01	0.02	0.00	0.50	75.00	Negative	Negative

Water Supply of Orangeburg, S. C,

Orangeburg Water and Light Plant. Owned by city. Superintendent, J. F. Pearson. Chairman of local Board of Health, V. W. Brabham.
Source: Three wells 8 inches in diameter and 200 feet deep, and one 10 inches in diameter and 250 feet deep, pumped and flowing in city. Capacity 800,000 gallons per day. Not filtered. Capacity of plant, 1,000,000 gallons per day. Average consumption, 400,000 gallons per day. Consumption per capita, 48 gallons per day. Service metered 90 percent. Sewerage system: Sixty-five percent of buildings connected with sewer and have water closets. Sewerage empties into Edisto River. Garbage dumped at incinerator and burned.

March 14, 1922	7.00	0.02	0.03	0.00	0.00	210.00	Negative	Negative
June 13, 1922	7.00	0.03	0.03	0.00	0.00	157.00	Negative	Negative
September 14, 1922	8.00	0.02	0.02	0.00	0.00	221.00	Negative	Negative
December 7, 1922	8.00	0.01	0.01	0.00	0.00	170.00	Negative	Negative

Water Supply of Pickens, S. C.

Pickens Water Works. Owned by City of Pickens. Superintendent, C. L. Hester. In charge of collection of samples, C. L. Hester. Chairman of local Board of Health, Dr. P. E. Woodruff.

Source: Creek, one mile from city. Capacity in gallons per day not estimated. Service metered. Fifty percent of buildings using city water supply. Sewerage system: Ninety percent of city sewered. Fifty percent of city buildings connected with sewer and have water closets. Sewerage empties into Septic tanks. No garbage disposal plant, garbage dumped on dumping ground.

June 13, 1922	10.00	0.02	.. 0.03	0.001	0.40	80.00	Negative	Negative
September 12, 1922	5.00	0.01	0.02	0.00	0.10	54.00	Negative	Negative
December 9, 1922	5.00	0.02	0.02	0.00	0.10	63.00	Negative	Negative

Water Supply of Rock Hill, S. C.

Water and Light Department, city of Rock Hill. Manager, W. P. Goodman. In charge of collection of samples, S. T. Frew. Chairman of local Board of Health, Dr. J. R. Miller.

Source: Catawba River, 6 miles from city. Filtered by mechanical filter. Treatment, ¾ grain of alum per gallon; ½ grain of lime per gallon; 0.05 grain hypochlorite of lime per gallon. Capacity of plant, 1,000,000 gallons per day. Average consumption, 800,000 gallons per day. Consumption per capita, 50 gallons per day. Service metered. Seventy percent of buildings using city water supply. Sewerage system: Forty percent of buildings connected with sewer and have water closets. Sewerage empties into small streams after Imhoff treatment, thence into Catawba River. Sewerage disposal plant. Garbage dumped on city farm.

March 21, 1922	5.00	0.03	0.03	0.00	0.00	85.00	Negative	Negative
June 10, 1922	6.00	0.01	0.02	0.00	0.10	90.00	Negative	Negative
September 22, 1922	6.00	0.02	0.02	0.00	0.00	74.00	Negative	Negative
December 11, 1922	6.00	0.02	0.02	0.00	0.00	90.00	Negative	Negative

Water Supply of Seneca, S. C.

Seneca Light & Water Plant. Owned by Municipal. Superintendent of Supply, Chas. Floyd. In chanrge of collection of samples, Chas. Floyd. Chairman of Local Board of Health, G. C. Sheppard.

Source: Creek about two miles from town. Capacity, 1,440,000 gallons per day. Service metered. Fifty percent of buildings using city water supply. Sewerage system: Seventy-five percent of city sewered. Fifty percent of buildings connected with sewer and have water closets. Sewerage empties into branch. No garbage disposal plant. Garbage hauled out Corporation and dumped.

June 10, 1922	7.00	0.02	0.02	0.00	0.10	25.00	Negative	Negative
September 6, 1922	5.00	0.03	0.02	0.00	0.00	66.00	Negative	Negative
December 5, 1922	6.00	0.02	0.02	0.00	0.00	31.00	Negative	Negative

Water Supply of Spartanburg, S. C.

Spartanburg Water Works. Owned by city. Operated by specially chartered Board of Water Commissioners. Superintendent, R. B. Simms. Chairman of local Board of Health, Dr. H. R. Black.

Source: Chinquapin Creek that flows into reservoir, Shoaley and Lawson's Fork Creeks, two miles from city limits. Capacity, 8,000,000 gallons per day. City consumption, 1,750,000 gallons per day. Treatment, one-half to 4 grains alum owing to turbidity with six to eight hours coagulant run, thence through mechanical filter to clear well and treated with chlorine. Consumption per capita, 60 gallons per day. Service metered. Eighty-five percent of city buildings using city water supply. Sewerage system: Eighty-five percent of buildings connected with sewer and have water closets. Sewerage empties into Lawson's Fork Creek and Fair Forest Creek, 1-8 mile from city limits. Garbage disposal plant and garbage burned, some garbage dumped on outskirts of city.

Sample Drawn.	Chlorine.	Free Ammonia.	Albuminoid Ammonia.	Nitrogen as Nitrites.	Nitrogen as Nitrates.	Total Solids.	Bacterial Indications of Contamination.	Chemical Indications of Contamination.
March 6, 1922	5.00	0.04	0.05	0.00	0.20	50.00	Negative	Negative
June 2, 1922	8.00	0.03	0.03	0.00	0.10	31.00	Negative	Negative
September 14, 1922	6.00	0.01	0.02	0.00	0.10	42.00	Negative	Negative
December 12, 1922	5.00	0.02	0.03	0.00	0.10	62.00	Negative	Negative

Water Supply of St Matthews, S. C.

Commissioners of Public Works, Owned by Municipal, Town of St. Matthews. Superintendent, J. W. Tucker. In charge of collection of samples, J. W. Tucker. Chairman of local Board of Health, Dr. A. R. Able.

Source: Well, 8 inches in diameter and 110 feet deep. In city. Capacity, 360,000 gallons per day. Service metered. Sixty percent of buildings using city water supply. Sewerage system: No sewer. Whites have septic tanks. Forty percent of buildings have water closets. No garbage disposal plant. Garbage is hauled off.

March 15, 1922	6.00	0.02	0.02	0.00	0.20	128.00	Negative	Negative
December 7, 1922	7.00	0.01	0.02	0.00	0.20	127.00	Negative	Negative

Water Supply of Sumter, S. C.

City Water Works. Owned by city. Superintendent, W. W. McKage. In charge of collection of samples W. W. McKage. Chairman of local Board of Health, H. L. Tisdale.

Source: Fifteen wells, 6 inches in diameter, 50 to 430 feet deep, pumped. Pumps in pit 9 feet below surface. One mile from center of city. Capacity, steam 1,800,000; electric, 1,440,000 gallons per day. Not filtered. Services 98 percent metered. Seventy-five percent of buildings connected with city water supply. Sewerage system: Seventy-fiv percent of buildings connected with sewer and have water closets. Sewerage empties into Turkey Creek on eastern side of city, and into Green Creek on western side, after passing through septic tanks. No garbage disposal plaint. Garbage hauled and dumped on lot outside of city limits.

March 29, 1922	12.00	0.03	0.03	0.001	0.70	43.00	Negative	Negative
June 15, 1922	13.00	0.02	0.03	0.00	0.40	74.00	Negative	Negative
September 15, 1922	15.00	0.01	0.02	0.00	0.50	73.00	Negative	Negative
December 14, 1922	11.00	0.02	0.04	0.005	0.50	114.00	Negative	Negative

Water Supply of Timmonsville, S. C.

Board of Public Works, Superintendent E. J. Lynch. In charge of collection of samples, Mr. C. C. Anderson, Charman of Board.

Source: Three wells, 8 inches in diameter and 170 feet deep, on outer edge of town. Capacity, 432,000 gallons per day. Average consumption, 20,000 gallons per day. Consumption per capita, 20 gallons per day. Service metered. Eighty percent of buildings using city water supply. Sewerage system: Sixty percent of buildings connected with sewer and have water closets. Septic tank. Sewerage empties into Sparrow Swamp. No garbage disposal plant. Garbage burned and dumped into swamp.

March 7, 1922	7.00	0.03	0.03	0.00	0.10	70.00	Negative	Negative
June 2, 1922	8.00	0.03	0.03	0.00	0.10	190.00	Negative	Negative
September 5, 1922	9.00	0.02	0.03	0.00	0.10	191.00	Negative	Negative

Water Supply of Union, S. C.

Municipal Electric Light & Water Works. Superintendent, W. B. Aiken. In charge of collection of samples, W. B. Aiken. Chairman of local Board of Health, W. H. Gibson.

Source: Creek, 2 miles from city. Capacity, 15,000,000 gallons per day. Filtered by mechanical filter. Treatment, alum and chlorine. Capacity of plant, 1,500,000 gallons per day. Average consumption, 750,000 gallons per day. Consumption per capita, 93 gallons per day. Service metered. One hundred percent of buildings using city water supply. Sewerage system: Seventy-five percent of city sewered and have water closets. Sewerage emtpies into Buffalo Creek. No garbage disposal plant. Garbage dumped outside of city limits.

March 13, 1922	6.00	0.02	0.04	0.00	0.10	67.00	Negative	Negative
June 8, 1922	7.00	0.02	0.02	0.00	0.10	78.00	Negative	Negative
September 5, 1922	6.00	0.02	0.02	0.00	0.10	65.00	Negative	Negative
December 14, 1922	5.00	0.01	0.04	0.00	0.00	71.00	Negative	Negative

Water Supply of Walhalla, S. C.

Town of Walhalla Water Works. Owned by Town of Walhalla. Superintendent, Freeman Bearden. In charge of collection of samples, Geo. M. Ansel, Chairman. Chairman of local Board of Health, W. D. Moss.

Source: Spring three and one-half miles from city. Capacity, 504,000 gallons per day. Service metered. Ten percent of buildings using water supply. Sewerage system: Eighty percent of city sewered. Ten percent buildings connected with sewer and have water closets. Sewerage empties into Cane Creek. No garbage disposal plant. Garbage is buried.

Sample Drawn.	Chlorine.	Free Ammonia.	Albuminoid Ammonia.	Nitrogen as Nitrites.	Nitrogen as Nitrates.	Total Solids.	Bacterial Indications of Contamination.	Chemical Indications of Contamination.
November 23, 1922	5.00	0.01	0.01	0.00	0.00	12.00	Negative	Negative

Water Supply of Winnsboro, S. C.

Board of Public Works. Owned by town. Superintendent, T. R. Ellison. In charge of collection of samples, T. R. Ellison. Chairman of Local Board of Health, Dr. J. E. Douglas.

Source: Creek, 2 miles from city. Filtered. Capacity, 1,000,000 gallons. Treatment, with alum. Average consumption, 75,000 gallons per day. Consumption per capita, 40 gallons per day. Service metered. Eighty percent of buildings using city water supply. Sewerage system: Eighty-five percent of city sewered. Seventy-five percent of buildings connected with sewer. Sewerage empties into Cathcart's Branch, ¾ mile from city. Septic tank. No garbage disposal plant. Garbage dumped in low waste places.

March 18, 1922	9.00	0.03	0.04	0.00	0.20	58.00	Negative	Negative
June 6, 1922	9.00	0.03	0.03	0.00	0.20	98.00	Negative	Negative
September 9, 1922	10.00	0.02	0.03	0.00	0.10	78.00	Negative	Negative
Dec. 11, 1922	9.00	0.01	0.02	0.00	0.10	103.00	Negative	Negative

Water Supply of Woodruff, S. C.

Board of Public Works. Owned by town. Superintendent, T. W. Cox. In charge of collection of samples, T. W. Cox. Chairman of local Board of Health, T. W. Cox.

Source: Two wells, one-half mile from city. Depth, 400 and 141 feet. Capacity, about 185,000 gallons per day. Service metered. Forty percent of buildings using city water supply. Sewerage system: Seventy-five percent of city sewered. Forty percent of buildings connected with sewer and have water closets. Two septic tanks. Sewerage empties into branch and creek. No garbage disposal plant. Garbage dumped in tank.

March 7, 1922	8.00	0.03	0.04	0.00	0.20	158.00	Negative	Negative
June 20, 1922	7.00	0.02	0.02	0.00	0.20	232.00	Negative	Negative
September 18, 1922	7.00	0.02	0.02	0.005	0.20	198.00	Negative	Negative
December 18, 1922	9.00	0.03	0.03	0.00	0.10	195.00	Negative	Negative

Water Supply of York, S. C.

York Water Plant. Owned by City. Superintendent, J. O. Wray. In charge of collection of samples, J. O. Wray. Chairman of local Board of Health, Dr. M. T. Walker.

Source: Branch ¾ mile from city. Capacity, 800,000 gallons per day. Capacity of plant, 500,000 gallons per day. Average consumption, 200,000 gallons per day. Consumption per capita, 35 gallons per day. Service metered. Seventy percent of buildings connected with city water supply. Sewerage system: Fifty percent of buildings connected with sewer and have water closets. Sewerage empties into Fishing Creek on east and Turkey Creek on west. No garbage disposal plant. Garbage dumped on wornout land outside city limits.

March 21, 1922	7.00	0.03	0.04	0.00	0.20	68.00	Negative	Negative
June 13, 1922	6.00	0.02	0.03	0.00	0.20	83.00	Negative	Negative
September 14, 1922	8.00	0.03	0.02	0.00	0.10	65.00	Negative	Negative
December 27, 1922	4.00	0.02	0.02	0.00	0.20	62.00	Negative	Negative

FINANCIAL STATEMENT

The following is a correct statement of the expenditures of the State Board of Health for the ficcal year 1922. All claims against the Board are itemized and rendered in duplicate, the original being attached to warrant of Comptroller General and forwarded to his office for payment—the duplicate being filed in this office.

SUPERVISION AND CONTROL OF HEALTH.

Appropriation		$ 1,755 00
A. Personal Service.		
A-3 Fees	$ 870 00	
B. Contractual Services.		
B-2 Travel	514 62	
C. Supplies.		
C-4 Office Supplies	20 40	
D. Fixed Charges and Contributions.		
D-9 Contributions	24 00	
Total Expenditures		1,429 02
Balance		$ 325 98

SUPERINTENDENCE AND ACCOUNTS.

Appropriation		$13,295 00
Transferred		300 00
		$13,595 00
A. Personal Service.		
A-1 Salaries	$8,560 00	
A-2 Wages	400 00	
B. Contractual Services.		
B-2 Travel	1,709 64	
B-3 Telephone and Telegraph	443 45	
B-4 Repairs	5 00	
B-5 Printing and Advertising	69 10	
C. Supplies.		
C-4 Office Supplies	680 45	
C-5 Laundry and Disinfectants	3 00	
C-7 Refrigerating Supplies	99 00	
D. Fixed Charges and Contributions.		
D-2 Rents	1,386 20	
D-4 Insurance	7 00	
D-9 Contributions (Association Dues)	61 00	
G. Equipment.		
G-1 Office Equipment	50 00	
Total Expenditures		13,473 84
Balance		$ 121 16

CONTROL OF EPIDEMIC DISEASES.

Appropriation		$32,300 00
A. Personal Service.		
A-3 Special Personal Service	$3,346 72	
B. Contractual Services.		
B-12 Travel	1,479 15	

C. Supplies.		
C-6 Medical Supplies	27,000 00	
Total Expenditures		31,825 87
Balance		$ 474 13

HYGIENIC LABORATORY.

Appropriation		$10,730 00
A. Personal Service.		
A-1 Salaries	$8,500 00	
A-2 Wages	400 00	
B. Contractual Services.		
B-1 Freight, Express and Deliveries	40 00	
B-3 Telegraph and Telephone	98.59	
B-4 Repairs	50 00	
B-6 Heat, Light and Power	245 16	
C. Supplies.		
C-3 Feed and Veterinary Supplies	150 00	
C-4 Office Supplies	500 00	
C-5 Laundry and Disinfecting Supplies	9 81	
C-6 Medical and Surgical Supplies	318 35	
C-12 Other Supplies	300 00	
D. Fixed Charges and Contributions.		
D-9 Contributions (Association Dues)	19 75	
G. Equipment.		
G-1 Office Equipment	47 84	
G-6 Live Stock	10 00	
Total Expenditures		10,689 50
Balance		$ 40 50

BUREAU OF VITAL STATISTICS.

Appropriation		$5,750 00
A. Personal Service.		
A-1 Salaries	$4,440 00	
B. Contractual Services.		
B-2 Travel	34 51	
B-3 Telegraph and Telephone	79 20	
B-4 Repairs	9 40	
B-5 Printing and Advertising	493 65	
B-8 Other Contractual Services	120 75	
C. Supplies.		
C-4 Office Supplies	349 96	
G. Equipment.		
G-1 Office Equipment	195 00	
Total Expenditures		5,722 47
Balance		27 53

BUREAU OF CHILD HYGIENE, PROTECTION MATERNITY AND INFANCY.

Appropriation;		$9,515.00
A. Personal Service.		
A-1 Salaries	$5,880 00	
B. Contractual Services.		
B-1 Freight, Express and Deliveries	4 38	
B-2 Travel	2,000 00	
B-3 Telephone and Telegraph	199 96	
B-4 Repairs	3 50	
B-5 Printing and Advertising	500 00	
C. Supplies.		
C-4 Office Supplies	300 00	
C-8 Educational Supplies	169 17	

D. Fixed Charges and Contributions.		
D-2 Rents	324 00	
G. Equipment.		
G-1 Office Equipment	49 75	
Total Expenditures		9,430 76
Balance		$ 84 24

BUREAU OF RURAL SANITATION.

Appropriation		$15,100 00
A. Personal Service.		
A-1 Salaries	$10,347 06	
A-2 Wages	500 00	
B. Contractual Services.		
B-2 Travel	3,223 75	
B-3 Telephone and Telegraph	67 22	
B-4 Repairs	396 58	
C. Supplies		
C-4 Office Supplies	387 94	
D. Fixed Charges and Contributions.		
D-2 Rents	162 00	
Total Expenditures		15,084 55
Balance		$ 15 45

HOTEL INSPECTION FUND.

Appropriation		$5,190 00
A. Personal Service.		
A-1 Salary	$3,240 00	
B. Contractual Services.		
B-2 Travel	1,854 65	
D. Fixed Charges and Contributions.		
D-4 Insurance	48 50	
Total Expenditures		5,143 16
Balance		$ 46 84

DIVISION OF VENEREAL DISEASE CONTROL.

Appropriation		$4,340 00
A. Personal Service.		
A-1 Salaries	$4,040 00	4,040 00
Balance		$ 300 00

MALARIA COOPERATIVE WORK.

Appropriation		$11,000 00
A. Personal Service.		
A-1 Salaries	$4,300 00	
A-2 Wages	2,985 06	
B. Contractual Services.		
B-2 Travel	1,000 00	
B-3 Telephone and Telegraph	100 00	
C. Supplies.		
C-4 Office Supplies	222 99	
C-12 Other Supplies	1,523 73	
D. Fixed Charges and Contributions.		
D-2 Rents	360 00	

G. Equipment.		
G-1 Office Equipment	45 00	
Total Expenditures		10,536 78
Balance		$ 463 22

Outstanding Bills.

SOUTH CAROLINA AND PALMETTO SANATORIA.

Appropriation		$68,290 00
A. Personal Service.		
A-1 Salaries	$18,348 24	
A-2 Wages	558 96	
A-3 Fees	650 00	
B. Contractual Services.		
B-1 Freight, Express and Deliveries	41 69	
B-2 Travel	775 00	
B-3 Telephone and Telegraph	209 93	
B-4 Repairs	370 15	
B-8 Other Contractual Services	1,629 02	
C. Supplies.		
C-1 Food Supplies	10,009 36	
C-2 Fuel Supplies	770 31	
C-3 Feed and Veterinary Supplies	3,183 57	
C-4 Office Supplies	244 12	
C-5 Laundry and Disinfecting Supplies	83 04	
C-6 Medical and Surgical Supplies	857 52	
C-7 Refrigerating Supplies	1,050 20	
C-9 Motor Vehicle Supplies	1,731 60	
C-10 Agricultural and Botanical Supplies	658 33	
C-11 Clothing and Dry Goods	815 90	
C-12 Other Supplies	1,834 81	
D. Fixed Charges and Contributions.		
D-4 Insurance	1,250 00	
F. Materials.		
F-2 Sewer and Water Materials	575 84	
F-4 Other Materials	924 00	
G. Equipment.		
G-3 Household Equipment	491 20	
G-4 Motor Vehicles and Equipment	557 56	
G-6 Live Stock	650 00	
G-8 Other Equipment	444 65	
H. Lands and Structures.		
Sewer Plant	1,360 00	
Water System	7,499 51	
Building	9,967 64	
Total Expenditures		67,542 15
Balance		$ 747 85

Outstanding Bills.